Western Philippines University

A Strong Partner for Sustainable Development

WPU RIDE ANNUAL CONFERENCE 2025

" INNOVATION FOR A SUSTAINABLE FUTURE:

Bridging Science, Technology, and Society"

Department of
Research, Innovation, Development,
and Extension (RIDE)

April 2025

BOOK OF ABSTRACT

WPU RIDE ANNUAL CONFERENCE 2025

THEME
Innovation for a Sustainable Future: Bridging Science, Technology, and Society

10 April 2025
College of Education Audio Visual Hall
WPU-Main Campus, Aborlan, Palawan
Host: College of Engineering and Technology (CET)

11 April 2025
Audio Visual Hall, WPU-Puerto Princesa Campus
Host: College of Fisheries and Natural Sciences (CFiNS)

Participating Colleges:

College of Agriculture, Forestry and Environmental Sciences (CAFES)
College of Arts and Sciences (CAS)
College of Criminal Justice Education (CCJE)
College of Education (CEd)
College of Engineering and Technology (CET)
College of Fisheries and Natural Sciences (CFiNS)
College of Public Administration and Management (CPAM)

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About the Conference

This year's Research, Innovation, Development, and Extension (RIDE) Annual Conference, with the theme "Innovation for a Sustainable Future: Bridging Science, Technology, and Society," aims to bring together the faculty, staff, and students of the Western Philippines University (WPU) to discuss advancements in solving various challenges and promoting sustainability.

The event showcases a total of 95 original research studies from the seven colleges across all WPU campuses. Among these, 72 are oral presentations, while 23 are poster presentations. The abstracts are arranged alphabetically by title, grouped according to oral or poster presentations, and categorized by college and event venue. Additionally, each college has prepared a short audio-visual presentation (AVP) highlighting its RIDE-related activities.

Among the seven participating colleges, the College of Fisheries and Natural Sciences (CFiNS) has the highest number of entries, with 37 presentations. The College of Education secured the second spot with 20 entries, followed by the College of Engineering and Technology in third place with 11 entries.

To accommodate the large number of presenters and encourage student participants, the event is scheduled on two separate dates and venues:

1. April 10, 2025 – College of Education Audio-Visual Hall, WPU-Main Campus, hosted by the College of Engineering and Technology (CET); and

2. April 11, 2025 – WPU-PPC Audio-Visual Hall, hosted by the College of Fisheries and Aquatic Sciences (CFiNS)

To set the tone and theme of the conference, and inspire the participants, we have invited two distinguished keynote speakers: Dr. Sylvester A. Badua, Associate Professor at the Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, and Dr. Deo Florence L. Onda, Associate Professor and Associate Dean for Research, Innovation Development and Enterprise, College of Science, University of the Philippines Diliman.

Presenters participating in the oral and poster competitions are categorized into undergraduate, graduate, and professional divisions. Cash prizes have been allocated for the first and second place winners in each category at both WPU-Main Campus and WPU-PPC Campus as a token of appreciation for their dedication to research and knowledge sharing. Additionally, the top three AVPs will receive cash prizes and certificates of recognition, while non-winning entries will receive consolation prizes. Aside from cash prizes, winners will receive complementary hard bound copies of The Palawan Scientist Journal.

Notable in this year's conference is the initiative to reduce carbon footprints. Participants will receive electronic copies of their certificates of participation and eBook of abstracts. Poster presenters are encouraged to print their posters on paper instead of tarpaulin.

This annual conference serves as the internal review and selection process of papers for presentation at regional, national, and international scientific fora. This event is also vital in fostering collaboration among faculty, staff, and students. It reinforces the university's mandate of providing advanced education, higher technological and professional instruction, and training in agriculture, fisheries, forestry, engineering, environmental science, education, arts and sciences, rural development, and other relevant fields. Furthermore, it promotes research and extension services while strengthening WPU's leadership in these disciplines.

The success of the RIDE Annual Conference 2025 reflects the strong camaraderie and collaborative efforts of the WPU community in advancing toward a progressive and sustainable society.

Roger G. Dolorosa, PhD
Director, Research and Development

PROGRAM
CED Audio Visual Hall, WPU-Main Campus, Aborlan, Palawan
April 10, 2025

7:30 am - 7:59 am	Registration
8:00 am - 8:59 am	Prayer National Anthem
Welcome Remarks	**Dr. Lota A. Creencia** VP Research Innovation Development and Extension
Photo Opportunity	**RIDE**
Message	**Dr. Amabel S. Liao** University President
Introduction of the Keynote Speaker	**Dr. Maribel B. Peneyra** Dean, College of Engineering and Technology
9:00 am - 9:30 am *Keynote Address*	**Dr. Sylvester A. Badua** Associate Professor III of Department of Agricultural and Biosystems Engineering, College of Engineering, CLSU
9:31 am - 9:40 am	**OPEN FORUM**
9:41 am - 9:42 am *Awarding of Certificate of Recognition to the Keynote Speaker*	**Dr. Amabel S. Liao** University President **Dr. Lota A. Creencia** VP RIDE
9:43 am - 9:55 am *Introduction of Participants & Judges*	**Engr. Jaysoon C. Macmac**
9:56 am - 9:59 am *Mechanics of Presentation*	**Engr. John Bryan C. Villapa**
10:00 am - 10:30 am	**BREAK**
10:30 am - 12:00 pm	**Presentation Proper (Parallel Session)**
12:01 pm - 12:59 pm	**LUNCH BREAK**
01:00 pm - 4:00 pm	**Presentation Proper (Parallel Session)**
4:01 pm - 5:00 pm *Closing Ceremony*	**Announcement of winners**
Closing Remarks	**Dr. Irven B. Cuen** Director, Intellectual Property Office

Engr. Vincent Dangan & Engr. Reycielo Denzon
EMCEE

PROGRAM
Audio Visual Hall, WPU-PPC, Sta. Monica, Puerto Princesa City
April 11, 2025

7:30 am - 7:59 am	Registration
8:00 am - 8:59 am	Prayer National Anthem
Welcome Remarks	**Dr. Lota A. Creencia** VP Research, Innovation, Development, and Extension
Photo Opportunity	**RIDE**
Message	**Dr. Amabel S. Liao** University President
Introduction of the Keynote Speaker	**Dr. Jean Beth S. Jontila** Dean, College of Fisheries and Natural Sciences
9:00 am - 9:30 am *Keynote Address*	**Dr. Deo Florence Onda** Associate Professor, UP MSI
9:31 am - 9:40 am	**OPEN FORUM**
9:41 am - 9:42 am *Awarding of Certificate of Recognition to the Keynote Speaker*	**Dr. Amabel S. Liao** University President **Dr. Lota A. Creencia** VP RIDE
9:43 am - 9:55 am *Introduction of Participants & Judges*	**Ms. Arlene L. Avillanosa**
9:56 am - 9:59 am *Mechanics of Presentation*	**Dr. Herminie P. Palla**
10:00 am - 10:30 am	**BREAK**
10:30 am - 12:00 pm	**Presentation Proper (Parallel Session)**
12:01 pm - 12:59 pm	**LUNCH BREAK**
01:00 pm - 4:00 pm	**Presentation Proper (Parallel Session)**
4:01 pm - 5:00 pm *Closing Ceremony*	**Announcement of winners**
Closing Remarks	**Dr. Roger G. Dolorosa** Director, Research and Development

Dr. Karen Salve M. Maute
EMCEE

Message from the University President

Oh what exciting times! The first Annual Ride Conference is here! Conferences are always such exciting events: they're like elevated science fairs from our elementary days! It has that same palpable air of wide-eyed fascination for the discoveries and innovations that you're about to behold; the same giddy exhilaration of holding in your hands a small piece of the scientific puzzle, a puzzle piece that is practically your baby that you poured blood, sweat, and tears to, a baby that you are now bringing out into the world to become one with the rest of the great big puzzle that is science.

And we from WPU are prolific lovers of that grand puzzle of science. After all, WPU was recognized as the sole winner of the Global Health Focus's "Top Performing MIMAROPA Universities in Research Publication", due to WPU being the only higher education institution (HEI) in MIMAROPA with Scopus-indexed publications. Our outstanding scientists were also recognized in the 2025 AD Scientific Index rankings, with 46 of our faculty members acknowledged for their outstanding contributions to various fields of research, mainly Fisheries, Agriculture and Natural Sciences, Social Sciences and Humanities, and Education.

So the people of WPU deserve to have these wonderful moments of scientific communion; and, we shouldn't have to wait for other institutions to host conferences like these in order to experience these great scientific moments.

Thus explains my excitement for the first WPU RIDE Conference, and the commitment that this meaningful conference will be held annually.

Year after year, as we come together with our own little puzzle pieces of science, we go out into the world offering a bigger and bigger piece, that will hopefully come together towards a sustainably developed West Philippines, Palawan, and the world.

To God be all the Glory.

Amabel S. Liao, PhD
WPU President

Message from the VP RIDE

We at the Research, Innovation, Development, and Extension (RIDE) Department are overwhelmed by the support and response from our students, faculty, and staff, who have submitted a total of 95 research, innovation, and extension outputs for the RIDE Conference 2025 in WPU Main Campus and Puerto Princesa Campus on April 10 and 11, 2025, respectively. This is a testament to our commitment to contributing to the universal Sustainable Development Goals (SDGs), the national agenda “Ambisyon Natin 2040,” and WPU’s programs.

The RIDE Annual Conference 2025 is our annual review of scholarly papers, where we share new knowledge, exchange insights, and learn from concepts with the theme: "Innovation for a Sustainable Future: Bridging Science, Technology, and Society.” It serves as a training ground for students and early-career professionals to present their original work, gain confidence, and develop new ideas in the process. On the other hand, the seasoned and experienced researchers and innovators have the opportunity to share constructive inputs during the forum. WPU’s Core Values of ‘culture of excellence,’ ‘commitment,’ ‘creativity,’ and ‘teamwork’ are manifested and practiced in this conference.

We offer prizes for the best oral papers, best posters, and audio-visual presentations as recognition and incentive for the quality of products presented before the WPU community. The winners and participants will have the opportunity to participate in different MIMAROPA Consortia regional conferences, as well as in national and international venues, this year and next.

Thank you to the RIDE working committees, led by Research Director Prof. Roger Dolorosa, and to the host colleges, the College of Engineering and Technology (CET) for the Main Campus and the College of Fisheries and Natural Sciences (CFiNS) for the Puerto Princesa Campus. Your diligence and commitment have made this event an excellent achievement for the RIDE Department.

Congratulations and best wishes to all participants of the RIDE Annual Conference 2025!

Lota A. Creencia, PhD
Vice President, RIDE

Message from the Dean, College of Engineering and Technology

Welcome, esteemed colleagues, researchers, innovators, and partners!

The College of Engineering and Technology is pleased to host this year's Research, Innovation, Development, and Extension (RIDE) Research Forum with the theme *"*Innovation for a Sustainable Future: Bridging Science, Technology, and Society*"*. This forum is a venue for sharing discoveries and innovative solutions to the pressing challenges of the industry, the community, and the academe.

This forum demonstrates the commitment of the different colleges of Western Philippines University in fostering research, innovation, development, and extension towards a more sustainable future. We are thankful to the faculty and student researchers for sharing the products of their studies that represent hours of dedicated work, pushing the boundaries of knowledge, developing innovative technologies, and extending their expertise to create tangible benefits for our communities and stakeholders for a more sustainable future.

Our heartfelt gratitude to all the participants, researchers, presenters, guest speakers and to the WPU-RIDE Department for making this event possible.

Maribel B. Peneyra, PhD
Dean, College of Engineering and Technology

Message from the Dean, College of Fisheries and Natural Sciences

It is with great honor that our College, the College of Fisheries and Natural Sciences (CFiNS), hosts our University's Research, Innovation, Development, and Extension (RIDE) 2025 Annual Conference in Puerto Princesa Campus. I would like to commend the earnest efforts of our university through hard work and dedication of our RIDE Department, in bringing together our students, researchers, and faculty, to showcase their works and innovations in their respective fields.

This year's theme *"Innovation for a Sustainable Future: Bridging Science, Technology, and Society"* emphasizes the importance of Innovation in bridging Science, Technology, and Society for a sustainable future for our generations. It highlights the role of innovations as a catalyst for positive change across all sectors of our society. This conference also provides a venue where everyone in our academic institution could share their works and how they impact the various fields and sectors of our society.

As we engage in this conference, may we continue to innovate in our work- whether in the laboratory, in the field, or in the classroom- and bridge the gap between science, technology, and society to have a sustainable future. Let us improve our collaboration with other entities within and outside of our university cutting across various disciplines, to ensure that our research and innovations are not only groundbreaking but are also socially responsible and sustainable for the long term.

Thank you very much and Mabuhay!

Jean Beth S. Jontila, PhD
Dean, College of Fisheries and Natural Sciences

About the Keynote Speaker

Dr. Sylvester A. Badua is an Associate Professor at the Department of Agricultural and Biosystems Engineering, College of Engineering, at Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines. He holds a Ph.D. in Biological and Agricultural Engineering from Kansas State University, USA.

Dr. Badua is a distinguished educator, researcher and innovator, committed to bridging science, technology, and society through cutting-edge research and practical innovations that promote sustainable agriculture. His works focused on integrating technology with traditional farming practices to create a more resilient and sustainable agriculture. He has been involved in developing precision agriculture, digital farming, and sustainable mechanization. Specifically, Dr. Badua has led multiple research initiatives, such as the Development of a Wireless Automated Solar-Powered Irrigation System for Hybrid Rice Production and the Design and Development of a Map-Based Variable Rate Liquid Nutrient Applicator for Onion Production.

His contributions have been recognized internationally, earning him prestigious awards like the Rain Bird Engineering Concept of the Year and Educational Aids Blue Ribbon Awards given by the American Society of Agricultural and Biological Engineers (ASABE). His scholarly impact extends to publications in reputable journals of topics related to innovations in precision planting, automation, and real-time agricultural sensing systems.

Beyond research, Dr. Badua actively engages with policymakers, industry leaders, and local communities, ensuring that scientific advancements translate into real-world applications. He contributes to the global discourse on sustainable agricultural technologies as a journal reviewer and technical evaluator.

Through his unwavering commitment to innovation for a sustainable future, Dr. Badua continues to develop solutions that can bridge the gap between science, technology, and society. These solutions empower farmers and transform agriculture into a more efficient, eco-friendly, and technologically advanced industry.

About the Keynote Speaker

Dr. Deo Florence L. Onda was born and raised in Brooke's Point, Palawan, where his early exposure to and fascination with marine life led him to pursue a Bachelor of Science in Biology from the University of the Philippines Baguio. He later specialized in marine biotechnology for his Master's degree in Marine Science from the University of the Philippines Diliman and microbial oceanography for his doctorate degree from Université Laval in Quebec City, Canada. He also had a post-doctoral fellowship at the Alfred Wegener Institute in Bremerhaven, Germany. He serves as an Associate Professor and Associate Dean for Research, Innovation Development and Enterprise, College of Science, University of the Philippines Diliman.

In March 2021, Dr. Onda made history as the first Filipino and one of the first two humans to reach the Emden Deep (10,045 m deep), the third deepest point on Earth located in the Philippine Trench. This milestone in deep-sea exploration highlighted the Philippines' integral connection to this underwater frontier.

Dr. Onda's research focuses on the ecology of marine microorganisms, including bacteria and phytoplankton, and their roles within aquatic ecosystems. He has led numerous scientific expeditions, such as the 2019 Protect West Philippine Sea (WPS) mission, which assessed the health of coral reefs in the West Philippine Sea. His work has been pivotal in understanding marine biodiversity and advocating for the conservation of aquatic environments.

Beyond his research, Dr. Onda is dedicated to science communication and education. His life and achievements have been chronicled in the children's book Doktor ng Dagat, which aims to inspire young Filipinos to pursue careers in marine science.

Dr. Onda's steadfast commitment to marine science, exploration, and education continues to inspire and contribute significantly to understanding and preserving the country's marine resources for the benefit of future generations.

PAPER PRESENTATIONS

WPU-MAIN CAMPUS

COLLEGE OF AGRICULTURE, FORESTRY AND ENVIRONMENTAL SCIENCES (CAFES) PAPERS

FACTORS SELECTION AND THE DEVELOPMENT OF FRUIT JUICE-LOADED CALCIUM-ALGINATE MICROBEADS

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ABSTRACT

Calcium-alginate is an efficient encapsulation material for bioactive extracts. However, many factors need to be considered for an effective encapsulation process. The objective of this study is to select the appropriate factors for Calcium-alginate encapsulation of fruit extracts through the Box, Hunter & Hunter (BHH) fractional factorial design. Six factors, including fruit juice type, fruit juice concentration, alginate concentration, $CaCl_2$ concentration, nozzle temperature, and gelation time, were screened in eight experimental runs as per design. The corresponding maximum and minimum levels were Indian gooseberry/melon juice, 25/10% v/v fruit juice, 1.0/0.5% w/v alginate, 1.0/5.0% w/v $CaCl_2$, 40/25^{o}C temperature, and 20/120 mins of gelation time, respectively. Microbeads were formed using the ionic gelation method through the dripping extrusion technique. The data analysis confirmed that all factors are critical to Ca-alginate microbead formation. %fruit juice and hardening time have a significant effect (P-value≤0.05) on bead size, while all other factors are highly significant (P-value≤0.005). For sphericity and firmness, all factors were highly significant at a P-value≤0.005. The results of this work will be a guide for future research related to microencapsulation of fruit juices/extracts with the Calcium-alginate system.

Keywords: Box-Hunter-and-Hunter fractional factorial design, calcium alginate encapsulation, gel strength, microbead sphericity, variable screening

GREEN SPACES IN WPU MAIN CAMPUS: A REFUGE FOR ENDEMIC AND CONSERVATION-PRIORITY WILDLIFE SPECIES

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ABSTRACT

This study explores the ecological importance of green spaces within the WPU main campus as a refuge for wildlife, particularly endemic and conservation-priority species, amidst increasing anthropogenic pressures on the landscape. This study identifies the wildlife assemblages utilizing the green spaces within the WPU Main Campus, with a focus on assessing the diversity and presence of endemic and conservation-priority species. The study employed a range of wildlife survey methods, including transect counts, spotlighting, audio surveys, active searching, and opportunistic observations. Data collection took place from August 2022 to September 2024. The data were analyzed using descriptive biological statistics, such as species richness, evenness, relative abundance, Shannon-Wiener diversity index, frequency, and averages. The wildlife survey revealed that the green spaces within the WPU main campus serve as a refuge and critical habitat for a biologically diverse species, including birds, mammals, and herpetofauna. Many of these species are endemic to Palawan and hold conservation priority status. It is also interesting to note that it also supports migratory birds during migration season. The university's green spaces offer diverse resources, such as food, water, nesting sites, and roosting areas. The presence of native vegetation, including wildlife food plants, supports various wildlife species. These findings underscore the importance of green spaces on university campuses for wildlife conservation. It is recommended that a policy for expanding and enhancing campus green spaces be developed. The university should adopt sustainable landscaping practices, including native plants, reduced pesticide use, and use of wildlife-friendly structures. Other institutions should also establish green spaces to promote wildlife conservation in human-dominated landscapes.

Keywords: conservation priority species, endemic species, green spaces, landscape ecology, wildlife diversity

INDIGENOUS KNOWLEDGE ON CLIMATE CHANGE ADAPTATIONS AMONG THE TAGBANUAS IN CABIGAAN, ABORLAN, PALAWAN, PHILIPPINES

Ma. Victoria O. Espaldon[1], Lucille Elna P. de Guzman[2], Oscar B. Zamora[2], Rosario V. Tatlonghari[4], Gloria Luz M. Nelson[4], Joan Pauline P. Talubo[5], Lita B. Sopsop[6]

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ABSTRACT

The indigenous peoples (IPs) are among the first to face the direct consequences of climate changes, hence many of them have developed coping strategies to face this event. For so long, the Tagbanua IPs remain resilient to climate changes despite many threats from this phenomenon. To elicit information on the historical memory on local weather and document the climate change adaptations of the Tagbanua IPs, the research team conducted focus group discussions, key informant interview, ocular observations and validation meetings to members and formal leaders of the Tagbanua indigenous peoples in Brgy. Cabigaan, Aborlan, Palawan, Philippines. The Tagbanua IPs observed major changes in the weather patterns. This included the prolonged dry season, the erratic rainfall, the delayed onset of rainy season and the occurrence of heavy rainfall causing floods. The disruptions and changes of the weather patterns prompted them to change their farming system. The presence of indigenous foods in the forests and the farming practices of the Tagbanua community are important factors for their resilience to climate changes. Their knowledge on medicinal plants in the surroundings is very significant, as the natural medicines provide healing that they need.

Keywords: farming system, forest, resilience, Tagbanua IPs, weather patterns

GROWTH AND YIELD PERFORMANCE OF CHINESE CABBAGE (*Brassica rapa* L. subsp. *chinensis*) AS INFLUENCED BY DIFFERENT RATE OF LOCALLY-MADE AND COMMERCIAL FOLIAR FERTILIZER APPLICATION

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ABSTRACT

Fertilization is the most crucial ingredient in successful production. Fertilizers can be applied to crops in both soil and foliar forms, although foliar application is simpler, less expensive, and more environmentally friendly. This study aims to determine the effect of local and commercial foliar fertilizer on the growth and yield performance of Chinese cabbage, determine the ideal rate of application of the local foliar fertilizer, and to determine the interaction effect of different foliar and rates of application. The study was conducted at Isaub, Aborlan, Palawan from May to September 2024. The study was carried out in a Strip Plot Design with three replications arranged in randomized complete block design (RCBD). Five (5) sample plants were randomly selected in each plot for the basis of observation. The treatments were: Main plot-types of foliar fertilizer: Super Foliar Plant Food and Algafer LFP foliar fertilizers; and Sub-plots: rate of application (0 ml/L; 10 ml/L; 15 ml/L; and 20 ml/L) of water. Results showed that the application of local foliar fertilizer dominated over the Algafer LFP foliar fertilizer by significantly increasing the final plant height. Additionally, it also enhanced the weekly height increment, improved the quality by increasing the value of total soluble solids (TSS) and increased the head diameter compared to plants applied with commercial foliar fertilizer. Highly significant interaction was observed between the different types of foliar fertilizer and rate of application. The application of 20 ml/L of local foliar fertilizer consistently produced a higher means in terms of herbage yield, weight per cabbage plant, heavier head weight per plant, higher weight of plants harvested per plot and higher dry matter yield (DMY) per plant. This rate also significantly reduced the production of non-wrapper leaves. Based on the result of the study, to produce heavier weight per plant, heavier cabbage head, lesser non-wrapper leaves development, the application of 20 ml of local foliar fertilizer per liter of water is recommended.

Keywords: Chinese cabbage, herbage yield, organic foliar fertilizer

GROWTH PERFORMANCE OF BROILERS WITH FRESH VERMI SUPPLEMENTATION IN TOTAL CONFINEMENT MANAGEMENT SYSTEM

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ABSTRACT

Commercial feed has become more expensive, which poultry raisers of today consider the most expensive component in the enterprise. This study was conducted to determine the effect of fresh vermi (FV) supplementation on the growth performance of broilers; in terms of weight gain, feed consumption, feed conversion ratio, water consumption, and dressing percentage. A total of 60 broiler chickens were randomly distributed to four dietary treatments to with, T_1 - 100 % Commercial Feeds (CF), T_2 - 98% CF + 2% FV, T_3 - 97% CF and 3% FV, T_4 - 95% CF and 5% FV. Average final weight was significantly influenced by FV supplementation. Results could be a relative relationship on the similarity of volume of water and amount of feed consumed between 2%, 3% and 5% FV supplementation. The closeness of percentage mixture could signify a comparative nutrient content. The weights of chickens were comparable relative to the feed conversion ratio. The dressing percentage, there was no significant difference observed, however numerically supplementation of 2% FV obtained the highest value of dressing percentage with 82.54 kg. The highest revenue among all the treatments was T1 with 188.00 and the lowest was T4 with 154.88, there were different effects in the return of investment in T1, T2, and T3 while T4 had the lowest result. The result also confirmed that the lower operating return of investment was T4 due to the exalted inputs of FV since vermi were expensive. Producing fresh vermi to enhance broiler chicken production might yield a respectable profit if vermi is produced by broiler chicken farmers.

Keywords: broiler chicken, confinement, fresh vermi, revenue, commercial feeds, growth performance, profit

GROWTH AND YIELD PERFORMANCE OF STEVIA (*Stevia rebaudiana* Bertoni*)* USING DIFFERENT NUTRIENT SOLUTIONS UNDER HYDROPONIC SYSTEM

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ABSTRACT

Stevia is a renowned natural plant sweetener due to its high stevioside content, making it a valuable alternative to artificial sweeteners. As the demand for stevia increases, optimizing its cultivation under hydroponic systems becomes crucial. This study aimed to: (1) determine the growth and yield characteristics of stevia (*Stevia rebaudiana* Bertoni*)* as influenced by different nutrient solutions, and (2) investigate which of the applied nutrient solutions can best enhance stevia production under a hydroponic system. The experiment was conducted using a randomized complete block design (RCBD) with seven treatments: T1 – Control (Commercial solution), T2 – Fermented Acacia, T3 – Fermented Madre de cacao, T4 – Fermented *Trichanthera*, T5 – 1:1 mixture of Acacia and Commercial solution, T6 – 1:1 mixture of Madre de cacao and Commercial solution, and T7 – 1:1 mixture of *Trichanthera* and Commercial solution. Each treatment was replicated thrice, with three sample plants per replication. Results revealed that application of inorganic nutrient solution (T1: Control commercial solution) increased the horticultural parameters of stevia particularly plant height, number of leaves, leaf size, root length, root weight and percent survival. In addition, yield and yield components such as the marketable and total yield of stevia were improved when applied with Commercial solution. Moreover, no significant difference was observed in plants treated with combined organic and in organic nutrient solutions (T2 – T7). The results of the study concluded that application of Commercial solution has the potential to increase the growth and yield of stevia. These findings suggest that the application of commercial nutrient solutions has the potential to enhance stevia growth and yield in hydroponic systems. Future studies may explore optimizing organic nutrient solutions to achieve comparable results.

Keywords: stevia, hydroponics, fermented leaves, commercial solution, aggregate composition

SPECIES DISTRIBUTION MODEL OF *Shorea contorta* S. Vidal IN THE PHILIPPINES USING MAXIMUM ENTROPY

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ABSTRACT

The *Shorea contorta* S. Vidal is categorized as a DENR vulnerable species however, its population is continuously threatened by illegal logging activities, conversion of forests to agricultural areas or plantations of other fast-growing species, climate change, and other anthropogenic activities. This study projected the current and potential distribution of *S. contorta* in the Philippines using Maximum Entropy (MaxEnt) approach. The location of *Shorea contorta* in protected areas and future harvestable areas were also identified and its potential revenue for timber production was assumed. The MaxEnt modelling software v3.4.4 was used for this study. The economic potential of *S. contorta* was measured through the revenue from timber production using stumpage valuation. This study identified that *S. contorta* is suitable in large plantation areas and as a future harvestable timber. Biophysical variables mainly affect the distribution of *S. contorta* by 87%, whereas the bioclimatic variables only affect the distribution by 13%. There was a total of 78 probable provinces for extraction. Among the provinces with high land area in terms of hectares in the Philippines, Agusan del Sur showed the best spot for a potential harvesting site. In addition, the authors' attempt to compute the stumpage value of the provinces with potential harvestable area obtained from the model showed a potential for timber production.

Keywords: dipterocarp, MaxEnt, modelling, stumpage value, white lauan, wood

COLLEGE OF ARTS AND SCIENCES (CAS) PAPERS

CAREER INTEREST EXPLORATION AMONG SOCIAL WORK STUDENTS: BASIS FOR PROPOSED CAREER DEVELOPMENT PROGRAM

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ABSTRACT

Understanding the career interest of Social Work students is vital in implementing a career development program. The profile of the respondents and career interest status were identified in the study. Career development program was conceptualized as an output. A mixed-method approach was employed with 30 first year Social Work students. The study utilized a researcher-made questionnaire, self-directed search (SDS) instrument and interview to assess career interests. Data analysis included frequency counts, percentages for quantitative data, and thematic analysis for qualitative data. Majority of respondents were female, with 50 % selecting BS Social Work as their first-choice. Most came from the General Academic Strand (GAS) in high school and had a general weighted average ranging from 90-100. A significant portion reported family incomes below ₱10,000.00, with parents primarily engaged in farming. The SDS results indicated a predominant interest in the Social domain, reflecting a preference for roles involving interpersonal interaction and helping others. It aligns with their chosen profession. However, there was a notable lack of interest in the Realistic domain, suggesting minimal inclination towards mechanical or technical tasks. Students cited alignment with personal passions, perceived career opportunities, potential for personal and professional growth, and external influences as key factors in their choice. Improved career counselling programs to help students align their interests with realistic career goals is needed. There is also a need to provide detailed information about university programs. Encouraging students to explore areas with lower interest scores, such as technical skills, mathematics, and research is suggested. Participating in community services can prepare for a meaningful Social Work career.

Keywords: career interest, career development, social work, tertiary education

COLLEGE OF EDUCATION (CED) PAPERS

ASSESSMENT ON THE IMPLEMENTATION OF THE SUPREME SECONDARY GOVERNMENT LEARNER SERVICES: BASIS FOR ACTION PLAN DEVELOPMENT

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ABSTRACT

This study assessed the implementation of the supreme secondary government learner (SSGL) services in terms of values formation, promotion of students' rights and welfare, promotion of curricular excellence, good representation of learners, and planning and implementation in Sofronio Española District. The descriptive-correlational method was used in the study. A total of 852 students, teachers and SSGLS officers of Sofronio Española District served as the respondents of the study. An adopted questionnaire was used in gathering the data which were analyzed through Descriptive Statistics, t-test, and one-way ANOVA, ensuring ethical considerations. The overall findings revealed that the level of implementation of the SSGL services in terms of values formation, promotion of students' rights and welfare, promotion of curricular excellence, good representation of learners, and planning and implementation were fully implemented. Moreover, there is significant difference between students and teachers on the implementation of the SSGL services in terms of good representation of learners. However, there is no significant difference between students and teachers on the implementation of the SSGL officers in terms of values formation, promotion of students' rights and welfare, promotion of curricular excellence, and planning and implementation. Also, there is no significant difference between organization, service and work and there is no significant difference between students', teachers', and officer themselves' perception on the level of commitment of the SSGL officers. The results will serve as the basis for action plan development in Sofronio Española District.

Keywords: services, supreme secondary learner government

COMPETITIVE ANXIETY IN RELATION TO MOBILE LEGENDS PLAYING PERFORMANCE AMONG E-SPORTS PLAYERS

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ABSTRACT

This study assessed e-sport players' competitive anxiety and performance during competition. It also determined the demographic profiles, anxiety levels, and playing performance of the e-sport players. Descriptive correlational statistics was employed to determine the frequency and percentage distribution of the data. Data were gathered in a controlled face-to-face manner during the pandemic in 2021 and utilized the Pearson's Product Moment Correlation in correlating the main variables. Overall, the findings show that most of the respondents are 16-20 years old and have less than a year of playing experience, but they have participated in some e-sports competitions in the local area. It also shows that most of the respondents perceived an average level of anxiety in participating in tournament competitions. Accordingly, the results revealed that all moderating variables like age, playing experience, and highest competition attended had no significant relationship [$p>0.05$] to competitive anxiety level. In the same manner, it was also revealed that the said moderating variables had no significant relationship [$p>0.05$] to the Mobile Legends playing performance among e-sports players. Furthermore, the respondents' level of competitive anxiety had no significant relationship [$p>0.05$] to the players' performance. This conclusion evolved from the social cognitive theory anchored throughout the study. Hence, suggest deepening the understanding, through conducting extensive research, about different factors that arouse competitive anxiety among e-sport players. Due to the increasing popularity of e-sports in the country, in terms of practical implications of the study, these results will serve as a measure for the coaches to create psychological interventions to help out the players dealing with different forms of anxiety in the game.

Keywords: arousal, competitive anxiety, e-sports, playing performance, social cognitive, sports education, sports psychology

IMPLEMENTATION OF STANDARD-BASED TEACHER PREPARATION: A CROSS-COUNTRY COMPARISON

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ABSTRACT

Quality teacher preparation is one of the foundations of effective and high-quality education. This study compares teacher education and preparation in the Philippines and Singapore, focusing on how each country equips future educators. Using a scoping review, relevant literature from databases, websites, and publications was analyzed based on inclusion and exclusion criteria. Findings reveal differences and similarities in teacher education policies, program specifications, curriculum design, and training structures in the two countries. Both countries follow standard-based teacher preparation, with Singapore's Nanyang Institute of Education (NIE) collaborating with the Ministry of Education (MOE) and the Philippines' teacher education institutions (TEIs) working under the Commission on Higher Education (CHED). Singapore teacher education, provided solely by NIE, demonstrates rigorous teacher selection, holistic training, and extensive practicum. It also ensures direct employment for graduates through a quota system, offering financial and non-monetary incentives while equipping them with essential content knowledge and pedagogical skills to attract and retain top candidates. In contrast, the Philippines' admission, selection, retention, graduation, and academic procedures vary between TEIs. Unlike Singapore, where teacher education is streamlined, the Philippines lacks a uniform system for entry requirements and practicum experiences. The Philippines' TEIs could start putting forward the change towards achieving quality education by setting more explicit goals for the teachers and by redefining teaching as a high-level profession. Key steps include stricter selection criteria, a regional quota system, stipends for top students, and extended practical training with defined outcomes. By considering policy reforms, in general, the Philippines can further enhance teacher preparation and improve education quality.

Keywords: best practices, policies, standards, teacher education, teacher preparation, teacher training,

INTERNAL WORK ENVIRONMENT OF WESTERN PHILIPPINES UNIVERSITY

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ABSTRACT

The state of the internal environment is vital in promoting the employee's productivity; however, this has received little attention at the Western Philippines University (WPU). This study examined the internal work environment of WPU and its impact on faculty and staff attitudes, satisfaction, morale, commitment, and performance. Using a quantitative descriptive and correlational research design, the study surveyed 135 faculty members and 63 staff across WPU's Aborlan, Puerto Princesa, and Quezon campuses. Findings showed that all aspects of WPU's internal work environment were favourable, except for the physical environment, which was only moderately favourable. Respondents reported positive work attitudes, high job satisfaction, strong work morale and commitment, and very satisfactory job performance. Significant correlations were found between various indicators of the internal work environment such as professional development, job responsibilities, reward systems, planning and decision-making, workplace relations, communication, physical environment, and organizational values. However, professional development and communication were not significantly related to work attitudes, satisfaction, morale, or organizational commitment. Additionally, management performance showed no significant relationships with any of the variables tested. The study recommends improving WPU's internal work environment, particularly its reward system and physical working conditions, to enhance employee satisfaction and performance.

Keywords: employee satisfaction, physical environment, professional development, reward system

PERCEPTION AND IMPLEMENTATION OF DEPED ORDER N0. 21, S. 2023 AMONG ELEMENTARY SCHOOLS IN QUEZON SOUTHERN DISTRICT, PALAWAN

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ABSTRACT

Understanding the perception and implementation of DepEd Order No. 21, s. 2023 provides insights into how teachers accept and comply with the directive. This study aims to determine the perception and implementation of DepEd Order No. 21, s. 2023 among elementary schools in Quezon Southern District, Palawan. This quantitative research employed a Descriptive-Correlational Approach, with 158 respondents. This study was conducted in the elementary schools in Quezon Southern District, Palawan in December 2024, using a researcher-made and validated Likert scale-type survey questionnaire. Data were analyzed using Pearson's *r* and Spearman's rho. Overall findings revealed that teachers generally have a positive perception of the implementation of DepEd Order No. 21, s. 2023. The teachers agree on its beneficial effects across various aspects. Additionally, the study found varying levels of compliance with the directive. Although most challenges were rated as neutral, teachers agreed that removing decorations made classroom walls appear untidy and in need of repainting. Further analysis revealed that age and teaching position are significant factors that affect the respondent's perception of DepEd Order. This indicates that demographic factors may influence how teachers perceive and implement an order. In contrast, there is no significant relationship between the demographic profile of the respondents and the extent of implementations of DepEd Order No. 21, s.2023. These results will serve as a measure for the Department of Education to provide support for teachers, classroom maintenance, professional development, and further research.

Keywords: DepEd Order No. 21, s. 2023, descriptive-correlational approach, teacher perception, education policy

UNDERSTANDING THE GAP: FACULTY VS. STUDENT PERCEPTIONS OF LGBTQ+ COMMUNITY AT WESTERN PHILIPPINES UNIVERSITY

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ABSTRACT

This study examines the perceptions of LGBTQ+ faculty and students at Western Philippines University - Puerto Princesa Campus towards creating a positive and inclusive environment. Employing a descriptive-correlational research design, the study utilized a survey questionnaire to assess attitudes across five key aspects: physical, emotional, mental, social, and spiritual. Data was collected from 68 participants, selected through a simple random sampling technique. The analysis of the data, using descriptive statistics such as frequency counts, percentages, and means, revealed a generally positive trend towards acceptance of the LGBTQ+ community. Faculty members demonstrated a higher level of agreement compared to students across all aspects. Both groups expressed openness to diverse physical expressions and emotional support for LGBTQ+ individuals. However, significant differences emerged in the physical aspect. Students exhibited greater uncertainty regarding same-sex relationships, marriage, adoption rights, and the acceptance of LGBTQ+ individuals within religious contexts. The findings highlight the need for continued education and open dialogue to foster a more inclusive environment that promotes understanding, empathy, and respect for LGBTQ+ individuals across the university community. The study recommends the implementation of targeted initiatives, such as awareness programs and workshops, to address the observed gaps in perceptions and promote a more inclusive and welcoming campus for all.

Keywords: LGBTQ+ community, perceptions, inclusion, higher education, university environment

COLLEGE OF ENGINEERING AND TECHNOLOGY (CET) PAPERS

ADOPTING ECO-FRIENDLY CONSTRUCTION MATERIALS FOR CLIMATE RESILIENCE: INSIGHTS FROM A COMMUNITY SEMINAR IN PUERTO PRINCESA

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ABSTRACT

The construction industry significantly contributes to environmental degradation, necessitating a shift towards sustainable practices. This study examines the adoption of eco-friendly construction materials in Barangay Cabayugan, Puerto Princesa, through a community seminar. The initiative aimed to address climate resilience, poverty reduction, and sustainable development by promoting the use of locally available, low-carbon materials that align with environmental and economic needs. The primary objective was to educate and train the community on sustainable construction techniques by introducing materials such as crushed waste glass, rice husk ash, and coconut coir. The study also aimed to assess community awareness and capacity in eco-friendly construction, identify barriers to adoption, and propose strategies for integrating sustainable building practices at the local level. A community-based participatory approach was used, incorporating seminars, hands-on workshops, and group discussions to enhance knowledge retention and skill development. Data collection involved surveys and direct observations to assess the participants' understanding before and after the training. The effectiveness of the training was evaluated based on engagement levels and the willingness to adopt the materials in future construction projects. Findings indicate that many community members were unaware of eco-friendly construction materials before the seminar. However, after the training, participants expressed a strong interest in adopting sustainable materials, citing cost savings, environmental benefits, and improved structural performance. Challenges identified included limited access to sustainable materials, lack of technical expertise, and financial constraints in transitioning from conventional construction practices. To ensure long-term adoption, it is recommended that local policies promote incentives for using eco-friendly materials, including tax benefits or subsidies. Further training programs and collaborations with government agencies and private sectors should be established to improve material accessibility and technical expertise. Encouraging local production and supply chains for sustainable construction materials can help integrate these practices into mainstream construction, enhancing climate resilience and economic opportunities.

Keywords: climate resilience, community-based initiatives, eco-friendly construction materials, sustainable building practices, Sustainable Development Goals (SDGs).

ASSESSMENT OF WESTERN PHILIPPINES UNIVERSITY COLLEGE BUILDING COMPLIANCE WITH BP 344: ENHANCING ACCESSIBILITY FOR PERSONS WITH DISABILITIES

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ABSTRACT

Ensuring accessibility in educational institutions is essential for inclusivity, particularly for persons with disabilities (PWDs). Compliance with Batas Pambansa Blg. 344 (BP 344) is crucial in creating an accessible learning environment. This study assesses the compliance of Western Philippines University (WPU) college buildings with BP 344 to identify areas for improvement and recommend necessary interventions. This study evaluates the compliance of WPU's college buildings with BP 344, focusing on building entrances, parking, interior pathways, restrooms, signage, emergency evacuation plans, and communication accessibility. It also identifies the highest and lowest areas of compliance and provides recommendations to improve accessibility. A descriptive survey method was used, including on-site inspections and compliance checklists based on BP 344 standards. Accessibility features such as ramps, elevators, signage, and PWD-friendly restrooms were assessed. A rating scale measured compliance levels, and statistical analysis ranked colleges based on adherence to BP 344. The overall compliance rating of WPU college buildings was 1.39, indicating minimal compliance with significant improvements needed. The College of Arts and Sciences (CAS) had the highest compliance (2.3), while the College of Engineering and Technology (CET) ranked the lowest (1.025). Key deficiencies were found in building interiors, emergency evacuation plans, and communication accessibility. Many buildings lacked ramps, elevators, and clear wayfinding signage. WPU should conduct an accessibility audit and implement ramps, elevators, and PWD-friendly restrooms. Signage and wayfinding systems should be improved, and faculty should receive disability awareness training. A monitoring and feedback mechanism should be established to ensure continuous compliance with BP 344, promoting an inclusive academic environment.

Keywords: accessibility, BP 344, building facilities, compliance, PWD

CORROSION BEHAVIOR ANALYSIS OF FIBER REINFORCED SELF-COMPACTING CONCRETE USING IMPRESSED CURRENT

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ABSTRACT

Corrosion in reinforced concrete from chloride exposure leads to early damage and degradation, with substantial negative consequences for safety, reliability, environmental impact, and economic viability. The emergence of Self-Compacting Concrete (SCC) and Fiber Reinforced Concrete (FRC) has been a breakthrough in concrete technology, significantly improving chemical resistance and structural durability. SCC is characterized by high strength and elasticity but suffers from brittleness and cracking, while FRC's fibers enhance bonding and improve crack resistance. Researchers continue to debate whether fiber addition improves self-compacting concrete's resistance to chloride-induced corrosion. This study develops SCC with tire waste steel fiber (TWSFRSCC) and examines its corrosion resistance alongside other components such as water and superplasticizer. Sixteen mixtures with different water-cement ratios (0.4 – 0.5), superplasticizer content (1% - 1.8%), and tire waste steel fiber amount (TWSF) (5 - 15 kg/m3) were prepared and tested for rheological properties and corrosion level (% mass loss) of 20mm diameter reinforcement from cube samples exposed to accelerated corrosion using the impressed current technique. The study finds that high water and SP exhibited the highest corrosion levels, whereas mixtures with low to moderate water and SP showed reduced corrosion. The addition of TWSF improved corrosion resistance by 28.71% to 44.64% compared to plain SCC. TWSF enhances the attraction of chloride ions, delaying their penetration into the concrete and acting as sacrificial anodes. This concludes that TWSF can strengthen the SCC and be applied in marine structures.

Keywords: corrosion, tire waste steel fiber, self-compacting concrete, impressed current, mass loss

DEVELOPMENT OF MECHANIZED ICE CREAM MIXER

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ABSTRACT

Sorbetes, a popular Filipino dessert typically enjoyed during the hot summer months, is traditionally produced using a manual process that is tedious, laborious, time-consuming, and often lacks proper sanitation. While various ice cream mixer machines are available in the market, many have design flaws that pose a risk of contamination due to the placement of their prime mover and other moving parts directly above the ice cream mixture. This study developed a mechanized ice cream mixer that reduces labor and production time while ensuring the safety and cleanliness of *sorbetes*. The machine was designed based on collected relevant information. It was fabricated and modified to achieve a fully functional prototype. Performance evaluation focused on efficiency (mixture overrun/expansion) and the time required to attain 80% overrun. The effects of three different mixing blade speeds (221.5 rpm-T1, 279.6 rpm-T2, 346.7 rpm-T3) were tested every 10 minutes for one hour without replications, and the results were compared to manual mixing. A simple economic analysis was also conducted to assess cost-effectiveness. The machine was powered by an electric motor positioned at the bottom of the cylinder, eliminating the risk of oil/grease contamination. Results indicated that only T2 achieved the 80% overrun after one hour of mixing, while higher speeds compromised the structural integrity of ice cream cells, leading to shrinkage. The machine required less time to reach the target overrun compared to manual mixing. With a total cost of Php 44,973.00, a payback period of 9 months and 29 days, and ROI of 20.91%, the mechanized ice cream mixer presents a viable alternative for *sorbeteros* and small-scale ice cream producers. The developed machine should be considered for adoption by *sorbeteros* and small-scale ice cream producers to improve efficiency, reduce labor intensity, and enhance product quality and sanitation.

Keywords: ice cream mixer, mixing blade, overrun, *sorbetes*, target overrun,

EVALUATION OF AN IMPROVED MECHANIZED COCONUT DEHUSKER

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ABSTRACT

The increasing demand for coconut husk product presents an opportunity for additional income for coconut farmers. This benefit can only be harnessed if the husk is already separated from the shell. However, there was still no mechanized coconut dehusker available in the local market. This makes the local coconut farmers still use the manual way of dehusking, which is tedious, laborious, and dangerous. Western Philippines University previously developed a prototype; however, some machine parts were not finely made and some materials used were not durable enough to withstand fatigue. Its dehusking performance also requires improvement for greater efficiency and capacity. This study developed an improved mechanized coconut dehusker, evaluated based on capacity and percentage of unbroken nuts using two speed combinations for the primary rollers: 75 rpm and 37.5 rpm (T1) and 56 rpm and 28 rpm (T2). Major innovations undertaken were the following: increasing the length of the secondary dehusking rollers, using heavy duty materials for the transmission system, addition of spikes on the primary rollers, use of detachable sprockets, and addition of coconut husk thrower. Performance evaluation showed that the highest capacity achieved was 510 coconuts/hr for T1, while T2 reached 432 coconuts/hr. The percentage of unbroken nuts was 95% for T1 and 100% for T2. Statistical analysis (ANOVA) revealed no significant difference in capacity and the percentage of unbroken nuts between the two speed settings. The machine's fabrication cost was Php 47,948.00, with a rate of return (ROR) of 16.53% and a payback period of 6.53 months. The improved mechanized coconut dehusker significantly enhances processing efficiency, reduces labor intensity, and improves worker safety. Its adoption by coconut farmers can increase productivity, optimize the coconut value chain, and contribute to economic sustainability. Policymakers should consider financial support and training programs to facilitate its implementation in coconut-producing communities.

Keywords: coconut dehusker, dehusking capacity, coconut husk remover, dehusking rollers, spiked rollers

GRAVIMETRIC BIO-GEOPERMEA WASTEWATER TREATMENT DEVICE FOR HEAVY METALS REMOVAL OF MINING EFFLUENT.

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ABSTRACT

Toxic chemicals and heavy metals from wastewater are introduced into the soil and aquatic system through several processes and can affect all living organisms. The mining effluent wastewater is being filtered, but it still involves some areas like rivers, waterways, and water courses near the mine operation and the residents living near the site. The researcher utilized to combine both Engineering and Science concepts which is the water lily ***(****Eichhornia crassipes****)*** macrophyte plant as a science concept and its efficiency in removing heavy metals and coral stones, limestones, sea sand, and powdered Malunggay seed *(Moringa olifera)* for removing heavy metals. This study's experimental investigation involved designing, producing, and testing the modified bio-geo permea water treatment device. The status of the water produced by the modified bio-geo permea water treatment device was tested in terms of physical, chemical, and heavy metals present in water from mining effluent. The results released signify the effectiveness and efficiency of the modified wastewater treatment device, and the results of pH increased from 5.4 to 6.89, the color of 1250 PCU became 150 PCU, the TSS (Total Suspended Solid) passed the limitation of the water content 600 mg/l becomes 74 mg/L. The device removed the heavy metals such as Chromium hexavalent (Cr^{+6}) content decreased from 0.2273 mg/L to 0.1220 mg / L and the Lead (*Pb*) also reduced from 0.03285 mg/L to 0.01 mg/L. The researcher discovered that after three trials in the treatment process, a large amount of heavy metal content, specifically the Chromium hexavalent (*Cr+6*), was significantly removed. This was because of the days of storing the treated water in the final pond, which consisted of a water lily as a macrophyte. Also, the device and its medium for filtering the waste and heavy metals present in the water were efficient. The study of water Lily ***(****E. crassipes)*** macrophyte plants is also significant to this research study. The plant contains about 90% water and 15-20% solid materials. The weed contains about 25-35% protein-related matter on a dry weight basis. Therefore, the filtered media used, such as powdered Malunggay seed *(M. olifera)*, dead coral stones, limestones, and sea sand, were effective in heavy metals removals, such as Chromium hexavalent (Cr^{+6}) and Lead (Pb). The device is recommended for the removal of heavy metals from mining effluent. However, further testing of the other heavy metals will be considered or to be tested.

Keywords: biological wastewater treatment, heavy metals, macrophyte, wastewater treatment

IMPACT ASSESSMENT OF ENVIRONMENTAL MANAGEMENT SYSTEM INSTRUMENT OF ISO 14001

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ABSTRACT

In the Philippines, particularly in the province of Palawan—often referred to as "the last frontier" environmental protection is deeply ingrained in the local culture. As construction firms establish operations and embark on numerous large-scale construction projects in the region, there is a growing focus on integrating sustainable practices and adhering to environmental standards such as ISO 14001. The objectives of the study are the following: to Identify the demographic profile of the construction firms in Palawan; to determine the issues, constraints and self-implication of assessment model instrument; to develop the assessment model instrument using principal component analysis; to test the reliability of the EMS of produced assessment model instrument; and to evaluate, assess the impact and produce the assessment model instrument of ISO 14001 on construction firms in Palawan. The survey questionnaire was constructed by the certified internal audit of ISO 14001 and distributed to the population of the construction firms in Palawan. The analysis of data includes descriptive statistical analysis such as mean and frequency. The results revealed that most of the construction firms in Palawan are private owned and did not apply ISO 14001 in their construction firm. Most issues contraries and self-implication of the assessment model are that it requires more stable worker cost and most of the indicators in their firm have most criterion met but need more improvement. The assessment model instrument was further revised and analyzed using the principal component analysis and further its reliability using Cronbach alpha. The assessment model instrument was developed through data reduction using the principal component analysis. It undergoes evaluation as ISO certified individual. Modified impact of assessment model instrument through time is recommended.

Keywords: Environmental Management System (EMS), construction firm, ISO 14001, Palawan, principal component analysis

PERMEAMETRIC GEOBIOS AND WATER FILTER FOR TAU'T BATO TRIBE AT SINGNAPAN VALLEY, RANSANG, RIZAL, PALAWAN

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ABSTRACT

The Philippine archipelago, known for its cultural richness and diversity, is home to numerous ethnic groups and Indigenous communities that have persevered through centuries of challenges and change. Among these resilient groups is the Tau't Bato, a subgroup of the Palaw'an tribe residing in the mountainous areas of southwestern Palawan. Despite the region's breathtaking natural landscapes and plentiful resources, obstacles such as limited access to clean and safe water continue to affect remote areas like the Tau't Bato settlement. The tribe relies on untreated spring water, exposing them to health risks associated with contaminated surface water. This study focuses on bridging this gap by exploring an innovative approach for the Tau't Bato tribe: the Permeametric Geobiosand Water Filter designed to address the specific water quality challenges of the tribe. This filtration system leverages bio-sand filtration, where silica sand, activated charcoal, xylem of pine tree, and gravel were utilized to enhance permeability and effectively remove contaminants. The inclusion of Permeametric Geobiosand Water Filters effectively enhance water quality, aligning with Philippine National Standards for Drinking Water (PNSDW), and provide a sustainable solution for potable water. It is recommended to conduct community-based training programs that will provide hands-on workshops, user-friendly materials, and involve local leaders to ensure proper use of the Geobiosand filter while fostering trust and participation and to continuously monitor water quality that ensures effective filter performance through routine testing.

Keywords: components of filter unit, filtration, filter efficiency, Geobiosand water filter, permeametry

PULL-OUT STRENGTH OF EXPANSION ANCHOR BOLT EMBEDDED IN POLYPROPYLENE FIBER REINFORCED CONCRETE

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ABSTRACT

Concrete is a well-known composite material valued for its high compressive resistance. Its most significant disadvantage is having a deficient tensile strength that causes the development and propagation of cracks—these properties of concrete limit its application with tensile stresses. To improve concrete's tensile strength, durability, and mechanical behavior, uniformly distributing fibers throughout its volume is now widespread and referred to as fiber-reinforced concrete. The study examined how the addition of polypropylene fibers influences the pull-out strength of expansion anchor bolts in concrete. An investigation into the influence of fiber content (0%, 0.1%, 0.2%, and 0.3%) on the material's resistance to splitting, compression, and pull-out was conducted. 56 cylindrical samples were tested for split tensile and compression tests, while 24 rectangular samples were tested for the pullout test. The inclusion of polypropylene fiber reinforcement led to significant enhancements in the splitting strength, compressive strength, and pull-out strength of concrete. It is recommended to conduct further studies using other type of anchor bolts with addition of polypropylene fiber percentages more that 0.3%.

Keywords: anchor bolt, compressive strength, polypropylene fiber, pull-out strength split tensile strength

UTILIZATION OF CONTACTLESS TECHNOLOGY FOR STUDENT MONITORING IN THE COLLEGE OF ENGINEERING AND TECHNOLOGY

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ABSTRACT

The study aimed to assess how effective contactless technologies, specifically Radio Frequency Identification (RFID) and Quick Response (QR) codes, are for tracking student attendance at the Western Philippines University, Aborlan Campus. This initiative was driven by the limitations of traditional manual attendance methods, which often led to problems like forgery and students arriving late. The primary goals of the study include analyzing and comparing the costs linked to RFID and QR technologies, evaluating the power consumption of each technology, assessing the logging speeds of both systems and investigating user convenience and preferences for each attendance logging method. This research utilized a descriptive-comparative analysis over a three-week timeframe from April 2023 to May 2023, employing a graphical user interface for data collection and efficiency metrics evaluation. Seventy (70) engineering students took part providing demographic details and sharing their feedback on convenience and performance through a Google Form survey. The findings revealed notable differences between the two technologies. The Logging Speed of RFID is 0.32 millisecond outperforming QR codes of 0.86 millisecond. Power Consumption of RFID had an average consumption of 796.83 VA, while QR codes consumed 817.02 VA. The initial setup cost for RFID was ₱20,419.00, in contrast to ₱20,572.00 for QR codes. Survey results indicated a stronger inclination towards RFID technology, with a composite mean satisfaction score of 4.55, compared to 4.37 for QR codes. The study advocates for the use of RFID technology to track student attendance, highlighting its affordability, energy efficiency, and user-friendliness. Additionally, schools should consider exploring other contactless options such as facial recognition and barcoding. Future research should aim to address scalability and the integration of these technologies with existing systems.

Keywords: monitoring, quick response (QR code), radio frequency identification (RFID)

WATER QUALITY AND SUITABILITY ASSESSMENT OF ABORLAN RIVER FOR IRRIGATION AND ANIMAL CONSUMPTION

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ABSTRACT

Proper water quality is essential for irrigation and livestock consumption to support plant and animal health, maximize profitability, and ensure that agricultural products remain safe for human consumption. The Aborlan River serves as a vital water source for most town inhabitants, who rely heavily on it for both domestic and agricultural needs, especially during the dry season. This study assessed the suitability of the Aborlan River water for animal consumption and irrigation by delineating the watersheds of Aborlan River to identify its tributaries and sampling sites, analyzing the physicochemical parameters of the collected water, and assessing it based on established water quality standards. The research also proposed sustainable management strategies for maintaining or improving water quality in the Aborlan River. The tributaries of the Aborlan River, utilized by farmers for irrigation and livestock production, were selected as sampling sites. Water samples were collected one foot below the surface following standard procedures. Physicochemical analyses were conducted at the DOST-Palawan and PPC Water District. The results were evaluated based on the US Regional Salinity Laboratory standards, FAO irrigation water quality standards, Water Quality for Livestock Drinking of USDA and Natural Resources Conservation Service, and the National Irrigation Administration water quality guidelines and general effluent standards for irrigation water. The findings revealed that the water quality of eight identified locations in the Aborlan River was suitable for irrigation purposes. However, some parameters were found to be unsuitable for animal consumption. These were the fecal coliform and Heterotrophic plate count, which exceeded the upper limit of the standard used. The result will help local decision-makers in developing evidence-based policies to ensure the sustainable use of the Aborlan River for irrigation and livestock production. It can also serve as a valuable reference for future research on seasonal variations in water quality, providing critical data for informed decision-making.

Keywords: animal consumption, irrigation, sustainability, water quality assessment

COLLEGE OF PUBLIC ADMINISTRATION AND MANAGEMENT (CPAM) PAPERS

CLIMATE CHANGE AWARENESS AND HOUSEHOLD FOOD (IN)SECURITY OF BARANGAY POBLACION, ABORLAN, PALAWAN

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ABSTRACT

This study examines climate change awareness, socio-demographic factors, and household food (in)security in Barangay Poblacion to guide strategies for improving resilience, food security, and economic stability. Specifically, this study assessed the socio-demographic profile of the respondents, their awareness and perception of climate change, and the level of household food (in)security in the community. A quantitative approach was employed using frequency counts, percentages, and means. The Household Food Insecurity Access Scale (HFIAS) from the Food and Nutrition Technical Assistance (FANTA) framework measured food access.The majority of the respondents and household heads were males, aged between 21 to 30 years old, with a mean age of 42.06. Most were married, resided in Purok Centro and Springside, lived less than five kilometers from the shoreline, engaged in fishing, earned below PhP 13,873 monthly, and identified as Tagalog. The majority of respondents demonstrated familiarity with climate change, exhibited full awareness of its impacts over the last 10 years, and strongly agreed on the increased intensity of climate-related occurrences. Furthermore, the community was found to experience mild food insecurity. The study recommends enhancing climate change awareness through media-based education, promoting livelihood diversification to reduce economic vulnerability, and supporting sustainable food security initiatives such as community gardening and climate-resilient agriculture. Given that most respondents rely on fishing and live near the shoreline, strengthening disaster preparedness through early warning systems and climate adaptation training is crucial. Policies should support these efforts while fostering collaborations among local leaders and organizations to ensure long-term economic stability, food security, and community resilience.

Keywords: climate change, food (in)security, low-middle income country, perceptions

DESK OFFICERS' MANAGEMENT OF BARANGAY VIOLENCE AGAINST WOMEN IN PUERTO PRINCESA CITY

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ABSTRACT

This study determined the knowledge and the effectiveness of Barangay Violence Against Women (VAW) Desk Officers in Puerto Princesa City. Specifically, the study aimed to 1. determine the socio-demographic profile; 2. determine the knowledge of the Barangay Violence Against Women (VAW) desk officers; 3. determine the effectiveness of the Barangay VAW desk officers; 4. identify the problems encountered by the VAW desk officers; 5. determine the significant relationship between the demographic profile and knowledge of the participants; 6. determine the significant relationship between the demographic profile and effectiveness of the participants; 7. determine the considerable difference between socio-demographic profile and the problems encountered. A descriptive-correlational research design was utilized for the 66 respondents. Data were gathered face-to-face from November to December of 2024, and data were analyzed using Frequency and percentage, Spearman rho and Kruskal-Wallis. Overall findings revealed that the respondents are age of 38-46, female, college level, speak tagalog, had attended seminars on anti-violence against w omen, received an honorarium of less than 5000, held the position of barangay kagawad, and had been 1 to 6 years in service. As to effectiveness, all the variables obtained a descriptive interpretation of effective. Participants agreed that there were problems encountered in the office. A significant relationship was noted between demographic profile and level of knowledge. For guidelines and local policies there is a significant relationship to sex, number of hours, ethnicity, and status; cases in barangay had significant relationship to sex, number of hours and status; while rights and privileges were related to sex and status; while for context, number of hours, ethnicity and status. As to significant relationship between demographic profile and level of effectiveness, responding and recording to gender-based violence had significant relationship to number of hours, incentives, and status; keeping VAW records confidential and secured and develop gender-based development plan significant to number of hours, ethnicity, and status; and for securing Barangay Protection Order is significantly related to age and sex. Lastly, no significant difference was noted between effectiveness and problems encountered. It is recommended that the national government should continue the programs for desk officers relative to policies, rules, and regulations; for local government, to adopt the national policy to include specific qualifications of officers; and for municipal welfare to focus on the rural barangays who need assistance.

Keywords: confidential and secured, development plan, gender-based violence, VAW Desk Officers

FACTORS AFFECTING THE RESEARCH PRODUCTIVITY OF FACULTY MEMBERS OF THE WESTERN PHILIPPINES UNIVERSITY– PUERTO PRINCESA CAMPUS, PALAWAN, PHILIPPINES

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ABSTRACT

Understanding the predictors of research productivity of the faculty members of the Western Philippines University – Puerto Princesa Campus (WPU-PPC) can guide the university in implementing strategies that can enhance research outputs of its constituents. The study aims to investigate the socio-demographic profiles, perceived research efficacy, perception of research-related organizational support, and research productivity of the faculty members in WPU-PPC. It also looked into how their profile may relate to their perceived efficacy and productivity, and how their efficacy and perceived institutional support may relate to research productivity. A quantitative research design was employed, and data were electronically collected through a survey questionnaire. Descriptive analysis was used to analyze the profile and productivity of the faculty members, and mean was used to look into the measure of central tendency of their perceived self-efficacy and perceived organizational support. Multiple Linear Regression was run to test the relationship of these factors. The findings highlight that sex and highest educational attainment significantly predict certain perceived self-efficacy. The college where the faculty members specialize, and the presence and quality of their social networks, collaborations, and colleagues positively impact publication and oral presentations. The number of poster presentations is positively impacted by the age bracket, while the book publication is predicted by the highest educational attainment. It is recommended for WPU to drive continuing education, invest in capacity building, and enable collaboration while creating an equal and efficient space for both men and women. Further studies are also recommended to examine the impact of intrinsic motivators on research productivity

Keywords: collaboration, research, research productivity, self-efficacy

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION PROCEDURES OF WESTERN PHILIPPINES UNIVERSITY

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ABSTRACT

Pursuit of high quality and excellence is of the prime objectives of higher education institutions in the Philippines along with diversification, global competitiveness, and internalization. The International Standardization for Organizations (ISO) certification of WPU demonstrates its commitment to its vision and mission. This study aimed to determine the level of implementation and satisfaction of ISO procedures at WPU based on the feedback of service providers and service users. This study utilized the quantitative-correlational research design. Data were gathered using two sets of survey questionnaires with service provider and service user as the respondents either through online platform and face-to-face approach. The findings indicated that the service providers exhibit strong adherence to ISO procedures. The service providers evaluated all aspects of ISO procedure implementation as being highly implemented, with one exception—document control, which received a moderate rating. The service user's satisfaction with the implementation of ISO procedures shows consistently high satisfaction implying they perceive the ISO procedure implementation as highly effective, with satisfaction levels remaining consistently high across all aspects. The WPU demonstrated commendable performance in meeting ISO standards, as reflected in both the perceived level of service provider implementation and the satisfaction levels of service users. However, there are several areas that the institution may wish to explore further to ensure continuous improvement in ISO compliance such as enhancement of training, awareness programs, and the provision of necessary resources—whether infrastructural, technical, technological, or financial.

Keywords: ISO procedures, ISO compliance, quantitative-correlational research design, service providers, service users

ONLINE FOOD DELIVERY SERVICES QUALITY'S EFFECT ON CUSTOMER LOYALTY

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ABSTRACT

In the Philippines, the online food delivery service industry is considered a lucrative business patronized by many customers. Extensive international studies have been conducted on this topic; however, local studies are limited, particularly in addressing the knowledge gap regarding the relationship between service quality and client loyalty using the OFDSERV metric. The study evaluated the quality of online food delivery services (OFDS) provided by platform-to-consumer (PTC) and restaurant-to-consumer (RTC) models and their impact on customer loyalty. It also examined the difference between the two groups of respondents regarding their views on online food delivery service quality (OFDSERV) and customer loyalty. Using a descriptive research design and quantitative approach, data were collected through an adapted online questionnaire administered to 232 consumers in the National Capital Region. Descriptive statistics analyzed service quality and customer loyalty, while inferential statistics tested differences between the two respondent groups. Partial least squares structural equation modelling (PLS-SEM) assessed the direct relationship between the constructs. PTC respondents rated reliability, assurance, system operation, traceability, and security as "strongly agree," with two statements on maintenance of meal quality and hygiene receiving an "agree" rating. RTC respondents gave system operation and security a 100% "strongly agree" rating, while reliability, traceability, assurance, and meal quality and hygiene received mixed ratings of "agree" and "strongly agree." In terms of customer loyalty, PTC respondents rated all items as "strongly agree," while RTC respondents marked one item as "agree." The analysis revealed a significant positive relationship between OFDS quality and customer loyalty. The findings underscore the importance of robust operational systems and consistent service quality in fostering customer loyalty. It is recommended that online food delivery service personnel be trained in the various OFD service delivery criteria to ensure customer loyalty.

Keywords: customer loyalty, online food delivery service quality, platform-to-consumer OFDS, restaurant-to-consumer OFDS

PERCEIVED CORPORATE SOCIAL RESPONSIBILITY (CSR) AMONG TRAVEL AND TOUR OPERATORS IN PALAWAN

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ABSTRACT

Corporate Social Responsibility (CSR) plays a vital role in promoting sustainable tourism particularly in El Nido, Palawan. However, no study has been done about the perceptions of travel and tour operators in El Nido regarding CSR. The study assessed the profile of travel and tour operators and their perceptions of CSR, analyzing its comparative, benefit, and favorability aspects. It further examined the importance of CSR, current participation levels, future CSR engagement intentions, and the interrelationships among these factors. A descriptive research design was employed, surveying 151 travel and tour operators in El Nido from 2022 to 2024. Data were collected using a structured questionnaire and analyzed using statistical tools to determine trends, perceptions, and correlations between CSR perception, importance, and participation. The results indicated that travel and tour operators in El Nido generally have a positive perception of CSR, with an overall mean score of 3.23 ("Agree"). Respondents acknowledged CSR's moral significance and recognized its competitive advantages. Among the three CSR perception dimensions, favorability showed a significant correlation with CSR importance, whereas comparative and benefits perceptions did not. Environmentally responsible business practices (mean = 3.26) and corporate social marketing (mean = 3.40) were rated as "Very Important." Additionally, 92.05% of respondents reported active CSR participation, and a significant relationship was found between CSR importance and participation levels. The study underscores the need for targeted policies to strengthen CSR engagement among travel and tour operators. Tourism stakeholders and policymakers should design programs that enhance awareness and encourage sustainable tourism practices. Strengthening CSR participation can ensure long-term environmental and economic sustainability in the travel sector.

Keywords: corporate social responsibility (CSR), CSR initiatives, perceived CSR, CSR participation, travel & tour operators

COLLEGE OF FISHERIES AND NATURAL SCIENCES (CFiNS) PAPERS

DIETARY QUALITY, FOOD SOURCE AND NON-COMMUNICABLE DISEASE RISK FACTORS IN PALAWAN, PHILIPPINES

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ABSTRACT

Non-communicable diseases (NCDs) pose significant public health challenges in the Philippines, particularly in rural and food-insecure areas. Understanding the relationships between dietary quality, food sourcing, and production is essential in identifying potential interventions. This study aimed to assess the dietary quality and food sourcing patterns of households in Palawan and examine their associations with key non-communicable disease (NCD) risk factors, including overweight/obesity, hypertension, and diabetes. A cross-sectional household survey was conducted among 1,689 individuals from 778 households in rural and urban areas of Palawan. Data on socio-demographic characteristics, food consumption, dietary diversity, food sources, and NCD risk markers (body mass index (BMI), blood pressure, and blood glucose) were collected and analyzed using descriptive and inferential statistics. Participants had a mean age of 40.1 years (SD 17.1), with 54.4% female and 18% having attained a university education. The standardized mean BMI was 19.3 kg/m², with overweight/obesity prevalence of 22.2% (95% CI: 20.0–24.6). Additionally, 18.4% were hypertensive, and 8.8% were diabetic. The mean Household Dietary Diversity Score (HDDS) ranged from 5.8 (SD 1.7) to 6.8 ± 2.1, with 55.5% of households reporting the self-production of food. Households sourcing food through both self-production and purchase exhibited higher dietary diversity and lower risk of non-communicable diseases (NCDs). Multivariable analysis confirmed that self-production significantly improved dietary diversity ($\beta = 0.6$, $p = 0.002$) and was associated with a reduction in the consumption of sugar-sweetened beverages and ultra-processed foods. Promoting household-level food production may enhance dietary quality and mitigate NCD risk. Integrating local food production initiatives into public health programs is recommended, particularly in rural communities vulnerable to food insecurity.

Keywords: dietary diversity, food security, food production, HDDS, NCD, public health

POSTER PRESENTATIONS, WPU-MAIN CAMPUS

COLLEGE OF AGRICULTURE, FORESTRY AND ENVIRONMENTAL SCIENCES (CAFES) POSTERS

POPULATION AND HEALTH STATUS OF ALMACIGA (*Agathis philippinensis* Warb.) IN THE PROPOSED "SAVING KENSAD TREASURE" IN NARRA, PALAWAN, PHILIPPINES

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ABSTRACT

Saving Kensad Treasure, is a project pioneered by Centre for Sustainability-Philippines, Inc. (CS) in collaboration with the Western Philippines University (WPU) in Aborlan, Palawan, Philippines, the aim of which is to conserve the Almaciga (*Agathis philippinensis* Warb.) in Mt. Victoria in the municipality of Narra, Palawan, the Philippines. Almaciga resin is a very important resource of the Tagbanua indigenous people (IPs), inhabiting the area, as it serves as their main source of income. This study particularly assessed the population and health status of Almaciga by doing surveys in the five (5) kilometer belt transect (c. 25 ha) established in the area. At least 116 Almaciga stands were recorded, implying a very low population of the species. Of the population encountered, 19 individuals were tapped, 3 of which were dead and 15 were in critical health condition. Resin tappers executed "test-tapping" on saplings to determine resin production, a detrimental practice as it destroys the small Almaciga leading to death in time. With the current situation of the Almaciga population in the area, immediate protection of the remaining stand, together with the most suitable restoration strategies should be collaboratively done between the IPs, the local government units, CS, WPU and other stakeholders for the success of the project. Furthermore, there is need to empower the resin gatherers on the proper way of Almaciga tapping to ensure the long-term sustainability of this valuable resource.

Keywords: Almaciga, *Kensad*, population status, Tagbanua IPs

UPSCALING OF PROCESSED PALAWAN MANGO (*Mangifera indica* L.) PRODUCTS TOWARDS ENTERPRISE DEVELOPMENT

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ABSTRACT

The Carabao mango is the only variety in the Philippines renowned for its exceptional eating quality and aromatic flavor, making it a premium export commodity. However, Palawan's mango industry faces a critical barrier—quarantine restrictions due to the presence of the mango pulp weevil (*Sternochetus frigidus*), which prevents access to national and international markets. To address this challenge, Western Philippines University (WPU) has pioneered innovative processing technologies to transform Palawan's mangoes, including those affected by weevil infestation, into high-value products. This initiative aims to revitalize the local mango industry and provide sustainable livelihood opportunities for farmers. This study examines the technological advancements, challenges, and economic potential of upscaling mango processing. Viable portions of weevil-infected mangoes were utilized to develop a range of value-added products, including dehydrated mango, jams, wines, nectars, and vinegars. These products were then introduced into local enterprises through technology commercialization strategies. The initiative has promoted sustainable enterprise development, empowering mango farmers to invest in their orchards despite quarantine restrictions. By commercializing these technologies, WPU has fostered a resilient mango industry, strengthened local economies, and contributed to food security in Palawan. This model demonstrates the potential for agricultural innovation to transform challenges into economic opportunities. While mango processing technologies are ready for full-scale commercialization, fluctuating market prices present a new challenge. To ensure stable supply and profitability, strengthening mango production through good agricultural practices and the adoption of advanced farming technologies is essential. Strategic policy interventions are needed to support farmers, expand processing capacities, and explore market linkages beyond Palawan.

Keywords: agricultural innovation, enterprise development, mango processing, Palawan mango industry, weevil infestation

COLLEGE OF ARTS AND SCIENCES (CAS) POSTERS

THE MEDIATING ROLE OF RIGHT-WING AUTHORITARIANISM ON RELIGIOSITY AND HOMONEGATIVITY AMONG MSU MAIN MUSLIM COLLEGE STUDENTS

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ABSTRACT

The knowledge on the homonegativity of heterosexual Muslim individuals remains limited despite the apparent increase in research on attitudes toward homosexuals in numerous population samples. These gaps in existing literature signal concern in predicting homonegativity through religiosity as mediated by right-wing authoritarianism. This study specifically sought to identify the mediating mechanism of right-wing authoritarianism as a probable linking variable for religiosity-homonegative relationship among Mindanao State University, Muslim college students. Through stratified sampling, a total of 278 MSU Muslim college students were surveyed and provided a set of questionnaires utilizing the following scales: Attitude Towards Lesbian and Gay Men Scale, Right-Wing Authoritarianism Scale, and Santa Clara Strength of Religious Faith Questionnaire. The data were then analyzed using descriptive statistics, t-test for independent means, bivariate correlation, and mediation analysis. The overall findings revealed that right-wing authoritarianism partially mediated the influence of religiosity on homonegative tendencies of students, which implies that even though right-wing authoritarianism explained a significant part of the association between religiosity and homonegativity, there still remained a strong direct relationship between the two variables. These findings contribute to existing literature as they provide an expansion to the knowledge of the field. The result will serve as a guide for local decision-makers in developing relevant strategies to promote public understanding and acceptance of the gender preferences of individuals who deviate from the majority.

Keywords: homonegativity, Muslim, religiosity, right-wing authoritarianism

COLLEGE OF EDUCATION (CED) POSTERS

INTERACTIVE EDUCATIONAL E-BOOK: A TOOL IN IMPROVING THE UNDERSTANDING ON THE TOPIC "FACTORS AFFECTING THE RATE OF CHEMICAL REACTION" AMONG GRADE 10 LEARNERS

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ABSTRACT

This study aimed to introduce an intervention that is new to learners. By using an Interactive Educational E-book, the researchers implemented an intervention through an individualistic approach. The study sought to identify effective methods to address students' difficulties in understanding the topic "Factors Affecting the Rate of Chemical Reaction" among Grade 10 learners. Participants were purposively selected from Grade 10 Section Garcia, identified as having the lowest Mean Percentage Score (MPS) across all sections in Grade 10 from Quarters 1 to 4. Data were gathered through a pre-test conducted before the intervention and a post-test administered after its implementation. Pre-test results showed a mean score of 2.06, while the post-test mean score rose to 4.53. These results indicate that the Interactive Educational E-book significantly enhanced the understanding of Grade 10 learners, particularly during Quarter 4, Week 7. This study highlights the potential of this tool in enriching classroom teaching interventions. Teachers are encouraged to use Interactive Educational E-books in remedial classes to help students strengthen their understanding of competencies they may have missed. Future studies should allow a longer time for students to engage with the e-book before post-tests. Additionally, integrating Interactive Educational E-books fully into lessons will ensure students gain comprehensive exposure to its content.

Keywords: educational research, e-learning tools, science education, student performance improvement, technology in education

COLLEGE OF ENGINEERING AND TECHNOLOGY (CET) POSTERS

GRAVIMETRIC BIO-GEOPERMEA WASTEWATER TREATMENT DEVICE FOR HEAVY METALS REMOVAL OF MINING EFFLUENT

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ABSTRACT

Toxic chemicals and heavy metals from wastewater are introduced into the soil and aquatic system through several processes and can affect all living organisms. The mining effluent wastewater is being filtered, but it still involves some areas like rivers, waterways, and water courses near the mine operation and the residents living near the site. The researcher utilized to combine both Engineering and Science concepts which is the water lily *(Eichhornia crassipes)* macrophyte plant as a science concept and its efficiency in removing heavy metals and coral stones, limestones, sea sand, and powdered malunggay seed *(Moringa olifera)* for removing heavy metals. This study's experimental investigation involved designing, producing, and testing the modified bio-geo permea water treatment device. The status of the water produced by the modified bio-geo permea water treatment device was tested in terms of physical, chemical, and heavy metals present in water from mining effluent. The results released signify the effectiveness and efficiency of the modified wastewater treatment device, and the results of pH increased from 5.4 to 6.89, the color of 1250 PCU became 150 PCU, the TSS (Total Suspended Solid) passed the limitation of the water content 600 mg/l becomes 74 mg/L. The device removed the heavy metals such as Chromium hexavalent (Cr^{+6}) content decreased from 0.2273 mg/L to 0.1220 mg / L and the Lead (*Pb*) also reduced from 0.03285 mg/L to 0.01 mg/L. The researcher discovered that after three trials in the treatment process, a large amount of heavy metal content, specifically the Chromium hexavalent (*Cr+6*), was significantly removed. This was because of the days of storing the treated water in the final pond, which consisted of a water lily as a macrophyte. Also, the device and its medium for filtering the waste and heavy metals present in the water were efficient. The study of *E. crassipes* is also significant to this research study. The plant contains about 90% water and 15-20% solid materials. The weed contains about 25-35% protein-related matter on a dry weight basis. The filtered media used, such as powdered malunggay seed *(M. olifera)*, dead coral stones, limestones, and sea sand, were effective in heavy metals removals, such as Chromium hexavalent (Cr^{+6}) and Lead (Pb). The device is recommended for the removal of heavy metals from mining effluent. However, further testing of the other heavy metals will be considered or to be tested.

Keywords: biological wastewater treatment, heavy metals, macrophyte, wastewater treatment

UP YOU GO: A BOARD GAME TO IMPROVE THE GRADE 7 LEARNERS' PROFICIENCY LEVEL ON THE LAYERS OF THE ATMOSPHERE

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ABSTRACT

Making science education more engaging is crucial for helping students grasp complex concepts. This research introduces "Up You Go," a board game designed to improve the proficiency level of grade 7 learners in comprehending the layers of the atmosphere, specifically within the branch of Earth and Space. The research explores how *Up You Go* can serve as a supplemental learning tool. Designed with educational principles in mind, the game incorporates interactive elements and cognitive challenges to strengthen conceptual understanding. A quantitative research approach was used, involving students from Grade 7 Curriculum from two sections at Quezon-Panitian National High School divided into control and experimental groups; 30 students from Grade 7- Taurus (Controlled Group) and 30 students from Grade 7- Sagittarius (Experimental Group). The experimental group used the board game during lessons, while the control group followed traditional teaching methods with activity sheets. Pre- and post-tests were conducted to measure proficiency gains. Results showed that students who played *Up You Go* demonstrated a significant improvement in their understanding of atmospheric layers. The experimental group demonstrated a higher average improvement rate compared to the control group and an evident significant difference in the proficiency level. The study underscores the benefits of gamification in science education, especially for complex topics. *Up You Go* fosters active learning, critical thinking, and collaboration, offering educators a valuable tool for improving student engagement and science proficiency.

Keywords: active learning, board game, critical thinking, collaborative problem-solving, Earth and Space, gamification, proficiency level, science education

COLLEGE OF PUBLIC ADMINISTRATION AND MANAGEMENT (CPAM) POSTERS

CLIMATE CHANGE AWARENESS AND HOUSEHOLD FOOD (IN)SECURITY OF BARANGAY IRAAN, ABORLAN, PALAWAN

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ABSTRACT

This study examines the socio-demographic profile of households in Barangay Iraan, Aborlan, Palawan, their awareness and perception of climate change, and the level of household food (in)security. Specifically, this study aims to measure the socio-demographic profile of the respondents, their awareness and perception of climate change, and the level of household food (in)security in Barangay Iraan. A quantitative approach was employed, and analyses were primarily descriptive, utilizing frequency counts, percentages, and means. The Household Food Insecurity Access Scale (HFIAS) from the Food and Nutrition Technical Assistance (FANTA) framework was also used to assess food access. The findings revealed that household heads were mostly male, aged between 51 and 60 years, with a mean age of 45.26. Most respondents were married and resided in Purok Pasi-pasi. They lived in households located more than 5.1 kilometers from the shore, were primarily engaged in farming, earned less than PhP 13,873 per month, which falls below the poverty line, and were of Tagbanua descent. The majority of respondents demonstrated familiarity with climate change, were aware of its impacts, and strongly agreed that its intensity had increased over the past decade. Furthermore, the community was found to be mildly food insecure. The recommendations emphasize increasing climate awareness through educational programs and health campaigns, advocating for climate-resilient policies, and supporting community-driven sustainability projects such as tree planting and gardening. Strengthening disaster preparedness and resilience is also essential, along with promoting sustainable practices through legislation and training. These initiatives aim to enhance community adaptation to climate change and foster long-term environmental sustainability.

Keywords: climate change, food (in)security, food and nutrition technical assistance framework, household food insecurity access scale

PAPER PRESENTATIONS, WPU-PPC

COLLEGE OF ARTS AND SCIENCES (CAS) PAPERS

BEST PRACTICES IN CONDUCTING MEETING OF BARANGAY MAURINGUEN COMMUNITY IN ARACELI PALAWAN: AN APPRECIATIVE INQUIRY

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ABSTRACT

This research explored the best practices for conducting meetings of the Barangay Mauringuen community in Araceli, Palawan using the Appreciative Inquiry (AI) approach. This study focused on the process of effective collaboration during a group gathering session to achieve desired outcomes with clear objectives and aims. Likewise, this study aimed to identify the best practices in conducting - meetings in Barangay Mauringuen and explore the impact of - best practices in the community. Furthermore, it sought to understand - how - community members maintain these best practices. The study employed a qualitative approach with direct interview and focus group discussion with ten participants. The - research - was conducted in four puroks of Barangay Mauringuen, Araceli, Palawan. The results were discussed using the four D's of AI: Discovery, Dream, Design and Destiny. The study identified the lens of best practices in the community meetings under the discovery phase, explored the vision of the community under the dream phase, investigated the community's strategy and plan to attain their dreams in the design phase and present the tangible outcomes that they foresee in the destiny phase. It allowed the study to gain knowledge about the flow of their actual meeting through an analytical process and participant observation that reflect the reformulation of data that was necessary in the study. Therefore, the construction of an assembly facility in Barangay Mauringuen is recommended. This might be possible with the community called "bayanihan" or the Filipino term of working together through collective action to achieve specific goals, where each village builds its own facility.

Keywords: appreciative inquiry, best practices, community engagement, community meetings, four (4) D's, purok

COLLEGE OF CRIMINAL JUSTICE EDUCATION (CCJE) PAPERS

AWARENESS AND PERCEPTIONS OF SEXUAL HARASSMENT AND THE SAFE SPACES ACT AMONG CRIMINOLOGY STUDENTS

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ABSTRACT

Determine the level of understanding of sexual harassment and the Safe Spaces Act among 1st year and 4th year criminology students. It focused on the level of knowledge regarding types of sexual harassment and Safe Spaces Act, common acts and violations, sources of knowledge and perceptions, and the specific areas or settings where instances of sexual harassment and violations of the Safe Spaces Act are observed or experienced. Employing a descriptive quantitative approach via convenience sampling of 236 respondents to gather data, utilizing survey questionnaires through Google Forms as primary data collection, data were analyzed using frequency and percentage. Findings reveal that most respondents exhibited good knowledge regarding sexual harassment and the Safe Spaces Act. Results on common acts of sexual harassment and violations of the Safe Spaces Act, someone made sexual remarks or jokes that insulted or offended others. Sources of knowledge and perceptions, they obtained information from articles read, teachers in the classroom, television, social media, and radio programs. Instances of sexual harassment and violations of the Safe Spaces Act were observed or experienced in online platforms, pathways or streets, public transportation, occurrences in front of the school, and transportation terminals. These results serve as a measure for developing and posting informative flyers and posters that contain information about sexual harassment and the Safe Spaces Act. Develop a module to capacitate students' understanding. Conduct awareness on Sexual Harassment and the Safe Spaces Act during the NSTP for 1st year and pre-emersion stage for 4th year during OJT paramilitaristics not only in criminology but to all colleges.

Keywords: common acts, criminology, Safe Space Act, sexual harassment, sources of knowledge,

EVALUATING THE PERFORMANCE OF WESTERN PHILIPPINES UNIVERSITY CRIMINOLOGY GRADUATES IN THE LICENSURE EXAMINATION FOR CRIMINOLOGISTS: A SIX-YEAR TREND ANALYSIS

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ABSTRACT

This study undertakes a comprehensive analysis of the performance of Western Philippines University (WPU) Criminology graduates in the Licensure Examination for Criminologists (LEC) over a six-year period, spanning from 2018 to 2023. The primary objectives of this research are threefold: (1) to identify trends in graduate performance across six (6) LEC subject areas, (2) to determine areas of strength and weakness in the current curriculum, and (3) to provide actionable insights into enhancing WPU graduate's preparedness for the LEC. Employing a quantitative research approach, this study utilizes data obtained from the Professional Regulation Commission (PRC). The results reveal persistent challenges in three (3) subject areas: Correctional Administration; Criminal Law, Jurisprudence and Procedure; and Criminology. Recommendations for improving students' performance include: (1) targeted curriculum enhancements to address identified areas of weakness, (2) benchmarking with reputable universities to inform best practices in Criminology education, and (3) integrating industry-based learning experiences to foster practical skills and knowledge application. The findings and recommendations presented in this research aim to inform evidence-based decision-making among educators, policymakers, and stakeholders committed to improving the quality of Criminology education in the Philippines.

Keywords: criminology, correctional administration, criminal law, licensure examination for criminologists

LEVEL OF IMPLEMENTATION OF DUTIES AND RESPONSIBILITIES OF BARANGAY ANTI-DRUG ABUSE COUNCIL (BADAC) IN THE MUNICIPALITY OF NARRA, PALAWAN: BASIS FOR BEST PRACTICES IDENTIFICATION

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ABSTRACT

This study aims to determine the level of implementation on the duties and responsibilities of Barangay Anti-Drug Abuse Council (BADAC) in Narra, Palawan as perceived by the residents and BADAC members themselves. It also determines the best practices employed by the BADAC Members in the implementation of their duties and responsibilities. The study used a descriptive correlational design which employed a mixed methods using quantitative and qualitative research methods. The survey questionnaire was administered personally to the respondents. The result of this study revealed that the level of implementation on the duties and responsibilities of BADAC as perceived by the residents and BADAC members themselves is highly implemented. Using the Wilcoxon W Test, the result on the difference between the Perception of BADAC Members and the Residents on the Level of Implementation of their Duties and Responsibilities showed a p-value of 0.988 which is greater than 0.05 level of significance which means that there is no significant difference between perception of the BADAC members and residents on the implementation of duties and responsibilities. As revealed by the result, one of their best practices is they immediately respond to calls even in their off duties. The researchers recommend that BADAC should strengthen its implementation to maintain high rating.

Keywords: barangay anti-drug abuse council, duties and responsibilities, implementation

THE REFORM AND REHABILITATION PROGRAMS OF PRISONERS IN IWAHIG PRISON AND PENAL FARM IN PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

This study aims to determine the reform and rehabilitation programs for prisoners of BuCor in Iwahig Prison and Penal Farm in Puerto Princesa City, Palawan; and to determine also the problems encountered by the respondents based on their perception on the effectiveness of the reform and rehabilitation programs and how this perception may be address. The study used a descriptive design method which employed convenience sampling technique using a quantitative method of research. The survey questionnaire was administered personally to the respondents. The result of the study revealed that in terms of the reform and rehabilitation program as to their work and livelihood rated as effective. Out of 9 indicators the healthcare services, education and skills training, sports and recreation, moral and spiritual program, therapeutic community rated as effective. While for the paralegal services, gender and development program and E-Dalaw program rated as less effective. The BuCor may provide additional paralegal experts that is a highly-valued member of a legal team and it has an extensive knowledge of the law and legal matters. Paralegals undertake a wide variety of administrative and legal work. A paralegal's role is to support lawyers in their work and they can choose to specialize in a specific area of the law. The purpose is for the fast-speedy trials for the inmates to be release in their respective communities.

Keywords: reform and rehabilitation programs, duties and responsibilities, implementation of the programs for the inmates.

COLLEGE OF EDUCATION (CEd) PAPERS

CONTENT ANALYSIS OF CELL DIVISION CONCEPTS IN SENIOR HIGH SCHOOL BIOLOGY TEXTBOOKS

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ABSTRACT

Content and accuracy evaluation of textbooks is important as it provides quality assurance to both teachers and learners, especially in the new normal where hybrid instruction is used. This research evaluated the biology textbooks used by Senior High School STEM Science teachers in terms of content, presentation, and learning strategies. Content analysis and Collaizzi's descriptive phenomenology approach were employed in this study. The results showed that all evaluated textbooks have unique, distinct content, presentation, and learning strategies. Most topics aligned with the minimum curriculum requirement for SHS STEM, but some books did not discuss cyclin-dependent kinases (CDKs) and control checkpoints. Learning outcomes were not indicated in some books, and few textbooks did not reach the synthesis and evaluation level. However, a comparative approach of cell division across the 5-kingdom system is observed but not explained well, and some misleading statements in the cell division mechanism were present. Considering that cell division precedes the discussion of cancer cell division and metastasis, content enrichment through learner-friendly visuals and diagrams is recommended to facilitate learning, improve retention, and avoid misconceptions.

Keywords: cell cycle; cell division; content analysis; senior high school biology textbooks

EARLY LITERACY SKILLS AND PARENTAL PERCEPTIONS IN READING DIFFICULTIES OF BEGINNING READERS

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ABSTRACT

To uncover common reading problems that occur among Filipino Grade 2 readers. It is highly imperative that these patterns/consistencies be discovered so that teachers and parents can take necessary steps or actions. This study would be of help to parents and reading teachers who want their students to improve in the area of reading. This study investigated the students' reading rate, word recognition, and attention to prosodic reading were investigated. The study also determines other factors affecting students' reading skills, particularly their demographics. Teachers and parents' perception on reading difficulties was determined. The study made use of descriptive research design. It was used to describe the demographic profile of the Grade 2 learners, their reading proficiency level and reading difficulties. The study drew 197 respondents who were then available and willingly participated in the survey. Consent letters were secured to allow the researchers to gather information from the respondents. Findings revealed that Grade 2 students generally had slow reading rates, little attention to prosody, and poor word recognition. These findings were supported with parents' and teachers' perceptions on the reasons behind students' reading difficulty. The study recommended that parents work collaboratively with teachers by helping their children enhance their reading skills through simple home reading activities. In doing so, students' performance in and motivation toward reading may improve.

Keywords: beginning readers, beginning readers, literacy skills, reading difficulties, perceptions

IMPACT OF ADAPTIVE STRATEGIES IN MOTOR SKILLS PERFORMANCE OF LEARNERS IN STUDENT NEEDS EDUCATION (SNED): BASIS FOR AN ACTION PLAN

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ABSTRACT

The study aims to evaluate how adaptive strategies influence the motor skills performance of learners in Student Needs Education (SNED) and use the findings to develop an effective action plan for improving their physical education experience.
The main objective of this study is to evaluate how adaptive strategies influence the motor skills performance of learners in Student Needs Education (SNED) and to develop an action plan based on the findings to enhance their physical education experience. The main method of this study is a quasi-experimental design with pre-test and post-test measures, incorporating adaptive strategies in motor skill activities to assess their impact on learners in Student Needs Education (SNED). Data collection includes performance assessments, observations, and surveys to develop an action plan for enhancing motor skill development. Findings reveal significant motor skill challenges among SNED students, with fine motor difficulties (76%) and motor planning issues (66%) being most prevalent. Anxiety (68%) also impacts performance. Educators largely understand adaptive strategies, with 84% supporting specialized instruction and 80% favoring classroom modifications. While 72% noted skill improvements, barriers like limited resources, training gaps, and time constraints hinder implementation. To enhance inclusive education for SNED students in motor skill development, schools should provide regular training on adaptive strategies, strengthen collaboration among educators, specialists, and parents, and allocate resources for assistive devices and occupational therapy. Educators need adequate planning time and support. Ongoing research should assess adaptive strategies for continuous improvement. Lastly, fostering an inclusive and supportive school environment is essential.

Keywords: adaptive strategies, special teacher education, student needs (SNED)

IMPLEMENTATION OF BRIGADA ESKWELA AMONG SECONDARY SCHOOLS OF BROOKE'S POINT, PALAWAN: BASIS FOR AN ACTION PLAN

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ABSTRACT

The purpose of the study is to examine the implementation of Brigada Eskwela in selected secondary schools in Brooke's Point, Palawan, focusing on respondents' socio-demographic profiles and their attitudes toward the program, while identifying challenges and assessing the effectiveness of awareness campaigns to provide insights for improvement and future research. This study examines the implementation of Brigada Eskwela in selected secondary schools in Brooke's Point, Palawan, focusing on respondents' socio-demographic profiles and their attitudes toward the program. Purposive sampling is used in this study to select participants based on specific characteristics or criteria relevant to the research objectives. This method ensures that the sample is representative of the population being studied, allowing for more meaningful insights and conclusions. The majority of participants are female, married, and college-educated, with an average age of 36. Findings indicate a strong readiness and commitment to Brigada Eskwela, reflected in positive responses to awareness campaigns. However, challenges were identified, including some disagreement on recent issues surrounding the program. While no significant relationship was found between socio-demographic profiles and pre-implementation levels, correlations were noted between these factors and the level of implementation, particularly concerning respondents' positions. Factors such as age, sex, civil status, and education did not significantly influence awareness campaign effectiveness, though school and position did. Overall, the study underscores a robust commitment to Brigada Eskwela while highlighting areas for improvement and further research to effectively address challenges. The recommendations and policy implications of the study suggest enhancing awareness campaigns tailored to different socio-demographic groups, providing training and support for school staff and community members, establishing a feedback mechanism to address challenges, implementing regular monitoring and evaluation processes, encouraging greater community involvement, and conducting further research to explore the long-term effects of Brigada Eskwela on educational outcomes and community engagement.

Keywords: action plan, educational research, implementation of brigada eskwela, teacher education

IMPLEMENTATION OF TECHNICAL VOCATIONAL LIVELIHOOD TRACK IN ROXAS CENTRAL DISTRICT

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ABSTRACT

The competencies of Technical-Vocational-Livelihood (TVL) teachers play a crucial role in shaping students' academic performance and career readiness. This study aimed to evaluate teachers' professional profiles, assess their teaching competencies, and examine the challenges they encounter in their teaching practice in Roxas Central District, Palawan Division. A descriptive-correlation research design was utilized, involving 32 teachers using total enumeration technique and 266 randomly selected students. Data were collected using *Google Form* during the second semester of the 2024-2025 school year and analyzed using Microsoft Excel Office LTSC 2024, adhering to ethical standards. Overall findings revealed that the TVL teachers are LET passers, college graduates with NC II, attended Division training, and have served the school for 7 to 9 years. A significant perception gap exists between teachers and students regarding teachers' competencies. Teachers overwhelmingly strongly agreed (M=4.624) in their abilities across six key competency areas: Classroom management, Mastery of the subject, Instructional material development, Teaching strategies and approaches, Communication Skills, and Learning assessment and reporting. In contrast, students only agreed (M=4.102) with their teachers' self-assessed competencies. Further analysis revealed that there is a significant difference ($p<0.05$) between self-assessment rating with students' assessment on level of competency. Moreover, Teachers rated "neutral" regarding challenges related to laboratory shops and classrooms and challenges related to linkages, while "agree" on the challenges regarding tools and equipment. These results will serve as a measure for policymakers and curriculum developers of the Department of Education to develop relevant programs for continuous improvement of TVL teachers' competencies.

Keywords: senior high school, teachers' challenges, teaching competencies, teaching practices, TVL educational research

KAHUSAYAN SA PAGGAMIT NG MGA WASTONG SALITA NG MGA MAG-AARAL SA KOLEHIYO NG EDUKASYON SA WESTERN PHILIPPINES UNIVERSITY

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ABSTRACT

Sa kabila ng maraming pananaliksik na naisagawa sa Wikang Filipino, iilan lamang ang nagsasagawa ng pag-aaral hinggil sa paggagamit ng wastong mga salitang Filipino. Dahil dito, binigyang-pansin ng mananaliksik ang pag-aaral na ito upang lalo pang malinang ang kakayahan ng mga mag-aaral sa paggamit ng mga angkop na salitang Filipino na ginagamit sa araw-araw na pakikipagtalastasan. Ang pag-aaral na ito ay naglalayong matukoy ang antas ng kahusayan ng mga mag-aaral sa paggamit ng mga wastong salita at matukoy kung mayroon bang makabuluhang kaugnayan ang demograpiko at akademikong profayl sa kanilang kaalaman sa paggamit ng mga wastong salitang Filipino. Ang palarawan at kwalitatibo-kwantitatibong pananaliksik na ito ay isinagawa sa 167 na mga mag-aaral na kung saan gumamit ng Purposive at Convenience Sampling sa pagtukoy ng mga repondente. Ginamit din ang Statistical Package for the Social Science (SPSS) sa pagsusuri ng datos; Frequency distribution at percentage. Batay sa mga natuklasan, mas maraming mag-aaral ang edad na 18-20, babae, Cuyunon, Tagalog ang unang wika, at may buwanang kita ng pamilya na mas mababa sa Php 10,000. Mas marami rin ang nagtapos sa pampublikong paaralan, may markang mula 1.51-1.75 sa asignaturang Filipino, na may kursong Bachelor of Secondary Education. Ang mga mag-aaral ay mataas ang kahusayan sa paggamit ng wastong salita sa pang-abay, pandiwa, at panghalip, at katamtaman naman sa pangngalan. Napatunayan din na walang ugnayan ang demograpiko at akademikong profayl ng mga mag-aaral sa kanilang kaalaman sa wastong paggamit ng salitang Filipino. Inirerekomenda ang paggawa ng modyul at pagsasagawa ng isang treyning-worksyap na makatutulong sa patuloy na pagpapataas ng kahusayan ng mga mag-aaral sa wastong paggamit ng mga salitang Filipino. Gayundin ang pagsasagawa ng karagdagang pag-aaral upang matukoy ang antas ng Kahusayan sa paggamit ng mga wastong salita sa pasalitang pamamaraan.

Keywords: antas ng kahusayan, makabuluhang kaugnayan, paggamit ng wastong salita,

LIVING MYTH IN A LIVING WORLD: A STRUCTURAL AND MYTHICAL ANALYSIS DEMYSTIFYING THE CREDENCE RENOWNED LASON CHRONICLES IN ABORLAN, PALAWAN

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ABSTRACT

The purpose of this study is to ascertain the origins of the “lason” belief in Aborlan Palawan and the types of “lason” that are most common. Residents of Aborlan, Palawan, have been asked to share their knowledge of the widespread “lason” customs in their community by participating in a confidential interview with the researchers. Four theories—the Functional Myth Theory, the Structural Myth Theory, the Mythology Diffusionism Theory, and the Historical-critical Theory—were used to interpret the numerous accounts the locals narrated. Withal, this study used semi-structured interviews to collect qualitative, open-ended data from eight respondents while conversing with them informally. According to the study, the stories shared by the residents stemmed from their personal experiences as well as those that passed down to the respondents by their relatives. Researchers found that “tapik” made the majority of answers during the investigation that was said “lason” can be transferred from “Maniglason” to its victim. This study concludes that “lason” practices were widespread in areas remote from urban areas in which there is no belief in such a type of matter. This study suggests that future researchers should design appropriate methods or strategies and number of participants when taking the same study to effectively bridge and address the existing issue.

Keywords: community stories, folklore, mythological theories, potion

READINESS OF NEWLY HIRED TEACHERS AT SCHOOLS DIVISION OF PUERTO PRINCESA CITY: BASIS FOR POLICY FORMULATION

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ABSTRACT

This study aimed to assess the readiness of newly hired teachers at the Schools Division of Puerto Princesa City anticipating using the output as Basis for Policy Formulation. It aims to assess the level of readiness and their impact on the actual teaching process and to ascertain the problems faced by the respondents. It utilizes both quantitative and qualitative approaches using survey questionnaires and an interview guide (Sarmento & Costa, 2017) among forty-five newly hired teachers from School Year 2022 to the present. Majority of the respondents have age ranges from 26 – 30 years old; female; college graduate; teaching English; and were employed during SY 2024-2025. They strongly agreed that the school leaders have roles in shaping the readiness of newly hired teachers in senior high schools; that they have encountered problems; and likewise, strongly agreed on their level of readiness in teaching. For the two (2) hypotheses, both *failed to accept* as findings showed that every component presented either *significant* or *not significant* verbal interpretations. Likewise, newly hired teachers acknowledged the multiple task's role of school leaders to ensure positive learning environments. Moreover, several problems were encountered varying from adjusting to the school's culture, balancing administrative work with teaching, among others and they feel that many school leaders fail to fulfill these roles, often lacking in guidance, mentoring, and support for them. Teachers handling TVL subjects expresses willingness to learn more, hence, a recommendation for the school leaders to consider seminar - workshop to equip the newly hired secondary teachers.

Keywords: conflict management, educational innovation, school category, psychological readiness, student interaction

RESEARCH TRAINING NEEDS ASSESSMENT OF TEACHERS USING P-R-I-O-R-I-TY FRAMEWORK: THE CASE OF NAPSAN

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ABSTRACT

The Napsan NHS and ES has not produced any research output, at least, since 2023. This is despite the Department of Education's mandate in research-based instruction and management policies. This study examined the research training needs of DepEd teachers in Napsan, a community in Puerto Princesa, Philippines. Specifically, the research sought (1) to determine how various competencies in research are interrelated, (2) to measure the gap between the importance of these skills and teachers' self-assessed proficiency, (3) to classify training themes into different need categories, (4) to determine if different trainings are needed by subgroups, and (5) to validate findings through community feedback. A quantitative cross-sectional survey was conducted among 19 teachers from elementary, junior high, and senior high schools using a 5-point Likert scale questionnaire. The survey assessed competencies grouped under training themes such as Fundamentals, Research Methods, Instrument Development, Qualitative Data Analysis, Quantitative Data Analysis, Referencing, and Post-Research Activities using the P-R-I-O-R-I-Ty Framework. The study revealed that research competencies in each training theme are significantly interrelated. There is a considerable gap between the high importance teachers assign to these skills and their moderate self-assessed proficiency. All of the training themes were classified as "moderate need". The analysis further indicated that training needs are consistent across different teacher subgroups. Follow-up community feedback further confirmed that the proposed training areas are relevant and require prompt action. The study recommends the implementation of professional development programs focused on practical research skills following the aforementioned priorities, the creation of continuous support systems such as professional learning communities, and seek technical advisory partners to cultivate a vibrant research culture among teachers in Napsan.

Keywords: assessment, competency gap, community extension, DepEd, professional development program

TRACER STUDY OF THE BACHELOR OF ELEMENTARY EDUCATION AND BACHELOR OF SECONDARY EDUCATION GRADUATES IN WESTERN PHILIPPINES UNIVERSITY-QUEZON CAMPUS FOR ACADEMIC YEAR 2007-2023

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ABSTRACT

A key measure of a program's effectiveness is ensuring the employability of its graduates. This study assessed the employability of graduates of Bachelor of Elementary Education (BEEd) and Bachelor of Secondary Education (BSEd) from Western Philippines University-Quezon Campus. Also, the relevance of the curriculum to graduates' teaching jobs, the skills they acquired, and the factors influencing their career choices and job retention were evaluated. A descriptive research design was employed. Data were collected in the second semester of AY 2024 through a Google Form distributed via Messenger, with 322 graduates responding. The findings highlighted that both BEEd and BSEd programs have provided strong academic training, equipping graduates with essential human, cognitive, and technical skills. High relevance between the curriculum and their teaching careers was found. Graduates remained in the teaching profession due to alignment with their academic preparation, security of tenure of office, and passion for teaching. The results underscore the need for continuous curriculum enhancement to maintain alignment with industry demands. The university should establish structured graduate tracking systems to further assess program effectiveness and address emerging educational needs.

Keywords: curriculum relevance, education workforce, graduate employability, professional skills, teacher education

THE RELATIONSHIP OF VOCABULARY SIZE AND DEPTH TO READING PERFORMANCE OF FIRST-YEAR UNIVERSITY STUDENTS

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ABSTRACT

The ability of tertiary students to comprehend reading texts is crucial because it serves as the foundation for academic success and lifelong learning. This study examined the relationship of vocabulary size and depth to the reading comprehension of first-year education students. A descriptive-correlational research design was employed to investigate the effect of vocabulary size and depth in reading performance of random 36 first-year students who were enrolled in an education program for the academic year 2023-2024. Data collection was done face-to-face employing a modified reading comprehension test, the vocabulary size test, and a word associate test. Results were computed through frequency, mean percentage scores and Pearson correlation coefficient. Findings revealed that there are opportunities for growth in students' reading performance, vocabulary size, and depth, with potential for further improvement to meet expected outcomes. It also showed a significant positive correlation between vocabulary size and depth and reading performance. It suggests that when students have both wide vocabulary skills and a depth of vocabulary knowledge, they can also have strong reading comprehension skills. Additionally, the findings highlight that vocabulary size and depth are strong predictors of the student's reading performance. This study also underscores the need to include teaching and enhancing students' vocabulary skills to improve reading comprehension skills. These findings will serve as a guide for curriculum developers course book writers to give importance to depth and size of vocabulary. Educators may be prompted to redesign their lessons and strengthen their vocabulary instruction by giving emphasis on learning vocabulary items. Policymakers can use these insights to allocate resources for vocabulary development programs, ensuring equitable access to quality language education, especially in underserved communities.

Keywords: lexicon, reading, textual understanding, word association

COLLEGE OF FISHERIES AND NATURAL SCIENCES (CFiNS) PAPERS

A REVIEW ON SET NET (LAMBAKLAD/OTOSHI-AMI) FISHERY IN THE PHILIPPINES

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ABSTRACT

In 1957, set net technology was introduced in the Philippines and was adopted by the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR) to uplift the lives of the people and improve fisheries production without causing habitat degradation. However, up to this writing, little studies have been done about set net fishery. This study provides a comprehensive review and synthesis of existing literature for set net fishery and identifies key knowledge gaps, which could be used as basis in creating policy recommendations. Related literature was primarily sourced by searching online published research articles, technical reports, proceedings, and grey literature. A combination of several keywords and terms was employed to explore papers related to set net fishery. In total, 45 references were reviewed and analyzed. A narrative synthesis was conducted, findings were summarized and organized into subtopics, key knowledge gaps were identified, and recommendations were developed. A total of 20 set net units under the BFAR National Lambaklad Project (NLP) were established all over the country. In addition, four (4) units are for installation and two (2) sites were already surveyed for possible construction and installation. Most of these were installed at depths of about 30-36 meters depth. Catch composition study in the country is limited to one (1) report from Kalibo, Aklan. Information on catch-per-unit-effort (CPUE) and its impact to the beneficiaries remained unknown. Studies related to bathymetric profiles of project sites, catch composition and catch-per-unit-effort, and cost profit analysis are needed to determine the impact of set nets to the beneficiaries.

Keywords: lambaklad, *otoshi-ami*, set net fishery

ADAPTATION AMID ADVERSITY: EXPLORING THE IMPACT OF INVASIVE *Chitala ornata* ON THE FISHERIES SECTOR IN LAGUNA DE BAY, PHILIPPINES

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ABSTRACT

This study examines the impact of the invasive Clown featherback (*Chitala ornata*), commonly known as the knifefish, on the fisheries sector in Laguna de Bay, Philippines. It investigates the effects of *C. ornata* on fisherfolk livelihoods and ecosystems, highlighting the socioeconomic challenges and exploring adaptation strategies employed by fisherfolk. The study utilized a descriptive research design, combining cross-sectional and before-and-after study methods. Face-to-face interviews were conducted with 106 fisherfolk respondents from three municipalities in Laguna de Bay. The findings revealed that the knifefish had a significant adverse impact on fishing activities and livelihoods, leading to declines in catches, changes in fishing efforts, damage to fishing gear, and a shift in sources of income. The study highlights the fisheries sector's socio-economic challenges and emphasizes the need for effective management and sustainable development. The government's efforts to control the knifefish population through a cash-for-work program, fishing gear intervention, and the seeding of tilapia fingerlings were appreciated but deemed insufficient by the fisherfolk. The study recommends a comprehensive needs assessment, additional funding support, livelihood opportunities, and training programs to address the invasive species issue. It also suggests promoting cooperative development, exploring alternative fishing methods, enhancing the economic potential of the knifefish, and strengthening collaboration for comprehensive management planning. The findings underscore the urgent need for strategies to mitigate the knifefish invasion's negative consequences and support fisherfolk's well-being in Laguna de Bay.

Keywords: *Chitala ornata*, invasive species, knifefish, Laguna de Bay

BACTERIAL LOAD AND PATHOGENIC ANTIBIOTIC-RESISTANT BACTERIA IN RECREATIONAL WATER OF PUERTO PRINCESA BAY, PUERTO PRINCESA CITY, PALAWAN, PHILIPPINES

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ABSTRACT

Monitoring the bacteriological quality of recreational water is important to safeguard the public's health by limiting exposure to harmful microorganisms, particularly antibiotic-resistant bacteria, which can infect swimmers and other recreational water users with severe infections and illnesses. There are scarce studies on this topic in Puerto Princesa City considering it is a prime tourist destination. This study aimed to assess bacterial contamination, detect the potential presence of bacterial pathogens, and investigate the presence of antibiotic-resistant bacteria from the coastal water in Puerto Princesa Bay. Five stations were established along the near shore of the bay where water samples were collected in triplicate. The Multiple Tube Fermentation (MTF) technique was employed to determine the most probable number of coliform bacteria. Moreover, selective and differential culture media were utilized to detect putative pathogenic bacteria. The antibiotic resistance was determined using Kirby Bauer test with Amoxicillin, Cefuroxime, Tetracycline, Cotrimoxazole and Ciprofloxacin as antibiotics tested. The study found that the water in Puerto Princesa Bay is contaminated with coliform bacteria, exceeding acceptable limits for recreational water as set by DENR standards. Four putative pathogenic bacteria were detected: *Escherichia coli*, *Klebsiella aerogenes*, *Vibrio parahaemolyticus*, and *Salmonella* sp. Kirby Bauer tests showed that isolated bacteria were susceptible to Cefuroxime, Ciprofloxacin and Tetracycline, while resistant to Amoxicillin and Cotrimoxazole. Regular monitoring of pathogens and coliform levels in coastal waters is recommended for protecting the health of local residents, tourists, and participants in recreational activities throughout the bay area. This research provides valuable data that can guide Puerto Princesa City's local government in implementing targeted preventive measures to mitigate disease transmission and reduce public health risks associated with contaminated coastal waters.

Keywords: antibiotic resistance, coastal water, coliform, pathogenic bacteria, recreational waters

BACTERIOLOGICAL QUALITY AND PUTATIVE PATHOGENIC ANTIBIOTIC-RESISTANT BACTERIA IN RECREATIONAL MARINE WATER OF HARTMAN BEACH, PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

Bacteriological quality of recreational water should be monitored to protect public health by preventing exposure to pathogenic microorganisms, especially antibiotic-resistant bacteria, which can cause serious infections and diseases in swimmers and other recreational water users. This study aimed to assess the most probable number of coliform bacteria and detect putative pathogenic antibiotic-resistant bacteria in the waters of Hartman Beach in Puerto Princesa City, Palawan. Water samples were collected in triplicate from 3 stations which are near mangroves, gleaning area, and bathing area from 10m, 60m and 110m away from the shore in Hartman Beach on February 24, 2025. The multiple tube fermentation method was used to test for coliform contamination. Selective and differential culture media were used to detect putative pathogens. The antibiotic-resistance of isolated bacteria from recreational waters was tested against Amoxicillin, Cefuroxime, Tetracycline, Cotrimoxazole, and Ciprofloxacin using the Kirby Bauer test. The results showed that all stations had coliform bacteria, and two stations had coliform levels above the acceptable limit for recreational waters. Coliform bacteria are highest near shore and decrease away from shore. Five putative pathogenic bacteria were detected and successfully isolated including *Salmonella* sp., *Escherichia coli*, *Vibrio parahaemolyticus*, *Vibrio furnissi*, and *Pseudomonas aeruginosa*. Among the five antibiotics tested, Ciprofloxacin showed the highest percentage of resistance, while Cotrimoxazole had the lowest. *Escherichia coli* showed the highest susceptibility towards five antibiotics while *Vibrio furnissi* showed the highest resistance. The results indicated significant bacterial contamination, with a notable presence of antibiotic-resistant strains. These findings suggest a potential public health risk associated with recreational water use at Hartman Beach, emphasizing the need for routine monitoring and mitigation strategies to ensure water safety and reduce exposure to antibiotic-resistant pathogens.

Keywords: amoxicillin, antibiotic resistant, cefuroxime, ciprofloxacin, cotrimoxazole, pathogenic bacteria, tetracycline, water quality

BEYOND THE WONDERS: UNRAVELING THE AQUATIC FAUNAL DIVERSITY OF PUERTO PRINCESA SUBTERRANEAN RIVER, PALAWAN, PHILIPPINES

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ABSTRACT

The Puerto Princesa Subterranean River (PPSR) is one of the world's unique subterranean ecosystems. However, previous explorations of the PPSR have predominantly focused on terrestrial flora and fauna, often overlooking the equally significant aquatic fauna. In this study, we explored into the depths of the PPSR to unravel its aquatic faunal diversity. Specimens were collected within the 4.2 km labyrinth of PPSR using various types of baited traps, with both water depth and surface salinity recorded in each sampling station. A total of 18 species were initially identified, comprising eight crustaceans, seven bony fishes, and three mollusks observed across two distinct seasons. Most species are considered euryhaline, with only a few primary freshwater species encountered. A seasonal variation in species composition was observed, with 11 species recorded during the dry season, five species noted during the wet season, and two species observed in both seasons. This study is one of the pioneering efforts in documenting the aquatic faunal diversity of PPSR, shedding light on crucial aspects of its biodiversity. The insights provided herein can contribute to enhance the conservation and management efforts within the national park.

Keywords: biodiversity, DNA barcoding, karst cave, subterranean ecosystem, underground river

BIOACCUMULATION AND DISTRIBUTION OF TRACE METALS IN THE PRIMARY TROPHIC LEVEL OF PUERTO PRINCESA BAY, PALAWAN

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ABSTRACT

Phytoplankton are one of the major drivers of coastal biogeochemical processes and, as primary producers, play an important role in pollutant transfer within the aquatic food chain. However, the dearth of studies hinders full comprehension of pollutant behavior, distribution, and potential climate impacts. This study concurrently analyzed metals in both seawater and phytoplankton within the different marine compartments of Puerto Princesa Bay, Palawan. This also investigated the bioaccumulation potential of metals in phytoplankton from seawater. Metals (Fe, Zn, Mn, Ni, Cu, Co, Cr, V, As, Hg, and Pb) from both seawater and phytoplankton were quantified using an inductively coupled plasma mass spectrometer (ICP-MS). Results showed that metals were accumulated by phytoplankton (BCF>1). Notably, different anthropogenic stressors affected the distribution pattern, with metal concentrations significantly higher ($P<0.05$) in mariculture and residential sites, contrary to less disturbed areas such as the mangrove and offshore sites. Results of this study also agree with the accumulation pattern in most phytoplankton studies: higher for essential (Fe>Zn>Ni>Mn>Cu>Co) in contrast to non-essential (Cr>V>Pb>As>Hg) metals. Further studies on phytoplankton metal bioaccumulation should be conducted to provide comprehensive baseline on their metal concentrations, distribution, and anthropogenic sources in the Philippines, for targeted monitoring and regulation policies to protect the bay's ecosystem as phytoplankton play a crucial role in transferring these pollutants through the marine food chain.

Keywords: bioaccumulation, marine pollution, phytoplankton, trace metals

FECAL COLIFORM ASSESSMENT OF PEN SHELL (*Atrina pectinata*, Linnaeus 1767) RELATED TO FOOD SAFETY IN SORSOGON, PHILIPPINES

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ABSTRACT

The province of Sorsogon considers pen shells as an important sub-fishery product for its significant and economic importance in providing employment, food and income. The study aims to assess food safety of pen shells in terms of fecal coliform concentration level of pen shell meat and water from harvest and market sites. Bacteriology analysis - Most probable number, MPN method (3M Petrifilm Fecal coliform count plate), three sampling sites in Sorsogon Bay and three markets were considered. Results reveals that all of the water samples and pen shell meat from the harvest sites were positive, but the mean result of 9MPN/ml and 25MPN/g counts, which passed the standard of 14MPN/100 ml of water sample and 230MPN/100 g fecal coliform of NSSP, National Shellfish Sanitation Program Guide of 2009 and RA 10611, or Food Safety Act of 2013. The results of the water and pen shell meat samples from the three selected markets of pen shell were greatly higher compared from the mean fecal coliform count of 545MPN/ml and 122MPN/g from the harvest sites. Result implies high contamination of fecal coliform on pen shell products sold in the market is greatly related to poor handling and low compliance to food safety regulations like good hygiene practices. Management mechanisms highly recommended includes conduct of technical training for harvesters and sellers to improve handling practice; improve common infrastructures and facilities, continued research monitoring of fecal coliform and other microbial pathogens such as *E. coli, Salmonella, Shigella, V. cholera,* and other to strengthen safety of shellfish consumption along Sorsogon Bay.

Keywords: fecal coliform assessment, food safety, pen shell

FISHING OPERATION OF BAGNET FISHERIES IN ALFONSO XIII, QUEZON, PALAWAN, PHILIPPINES

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ABSTRACT

The "bag net (balasnig)" comprises a horizontal netting panel or a bag shaped like a parallel pipe, pyramid, or cone with an upward opening. The fishing method is commonly operated in Palawan waters, but not much is known on how the gears are operated and the volume of catch. This study aims to determine the fishing operation of bag net fisheries in terms of the number of deployments, fishing time, and fishing equipment used in operation; species composition; bag net production 2020-2023; characterization of fishing gears; catch-per-unit-effort (CPUE) per fishing vessel; and the fishing ground. This study was conducted in Barangay Alfonso XIII, Quezon, Palawan. The study used participatory methods, with fishermen answering structured questionnaires. The data from the respondents were encoded in Microsoft Excel, and the formula of FAO (2025) was used to compute the fishing effort and CPUE. Bag net fishing in Alfonso XIII, Quezon, Palawan, involves 2 to 5 deployments per day, with most vessels deploying 3 to 4 times. Deployment lasts 10–20 minutes, while hauling takes 20–45 minutes, with a common pattern of 15-minute deployment and 30-minute hauling. Soaking time varies from 10 to 45 minutes. Fishers use radio, GPS, fish finders, and parachutes, with the first three being the most common. Targeted species include Mackerel scad, White-lipped mackerel scad, Indian mackerel, and others, with the first three being the most abundant. Fishery production increased from 2020 to 2023, except in 2022, peaking between March and October (48,510–290,850 kg). Three netting types (knotless, screen, and combination) are used, with screen netting preferred. Mesh sizes vary, with the most common being 14 (2.34 cm). Net width ranges from 128.1 to 168.38 meters, and length from 21.96 to 36.6 meters. Sinkers weigh 130–180 kg. The catch per unit effort (CPUE) ranges from 160 to 533 kg per fishing effort, with total catches between 1,760 and 3,200 kg per operation. Lastly, the common fishing ground of bag net fishers of Quezon, Palawan was near the boundary of municipal water of Quezon and Rizal, with the deep approximately 30 to 70 meters. Sustaining the bag net fishery in Alfonso XIII, Quezon, Palawan requires research and proper management. Regular fish population monitoring and off-season regulations can help maintain fish stocks. High catch rates of bag net fishery may lead to species decline without proper management. Improved data collection on fishing methods, catch volume, and species diversity will aid decision-making. These strategies will ensure long-term productivity, support local livelihoods, and preserve marine resources.

Keywords: gps, knotless, mesh size, number of deployments, parachute, offseason

GREEN MUSSEL, *Perna viridis* SPAT PRODUCTION AT BINDUYAN MARINE RESEARCH STATION: A STEP TOWARDS SUSTAINABILITY AND FOOD SECURITY

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ABSTRACT

The low and unpredictable supply of green mussel seed stock due to environmental degradation and over harvesting was considered as one of the major causes of low mussel production in the Philippines. To provide adequate response to the problem of sustainability of mussel industry in the country, the Green Mussel Hatchery aimed to establish the production protocols to augment the natural stock and to provide the spat requirement of the grow out sector. This study applied hatchery and nursery techniques for green mussel spat production at Binduyan Marine Research Station (BMRS) hatchery testing UP Visayas protocol efficiency in a large-scale production system. Adult green mussels were taken from New Quinlo, Taytay, Palawan and transported to WPU-BMRS for the spawning and rearing trials following UP Visayas protocol. Survival and growth from D-hinged larvae to pediveliger stage, pediveliger to early spat (1mm), and early spat to spat (10mm) were closely recorded. A total of 723.5 million eggs were produced from the four spawning activities. The target survival from egg to spat was attained, implying that production on a commercial scale is possible provided the optimum conditions are followed. This result will serve as a basis for the policy makers and fishery managers to institutionalize hatchery production of green mussels to augment spat production to support the green mussel industry.

Keywords: D-hinged larvae, hatchery, pediveliger, seedstock, spat

IMPACTS OF MINING CAUSEWAY/PORT ESTABLISHMENT ON MARINE ECOSYSTEMS AND LIVELIHOOD, HEALTH, AND WELL-BEING OF SMALL-SCALE FISHERS IN BROOKE'S POINT, PALAWAN, PHILIPPINES

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ABSTRACT

Reclamation activities have been observed as one of the destructive anthropogenic activities in many coastal areas in the Philippines, especially in Palawan. This study was conducted in response to the call of fishing communities in Brooke's Point. Palawan, Philippines whose fishing activities and livelihood were adversely affected by the mining causeway/port constructed in their area. A rapid assessment through snorkelling and ocular visit within the seagrass beds and coral reefs in the vicinity of the mining causeway/port and impacts on livelihood and health of fishers were conducted and photo-documented. A face-to-face interview was also conducted to 20 fishers near the causeway/port. Results showed that the waters surrounding the causeway (~ 1 km) were heavily silted and turbid, making it impossible to see the underwater ecosystems in deep areas (>3m). In shallow sites though (~3m), patches of corals were documented but many were dying due to siltation. Interviews with fishers revealed that the area occupied by the mining causeway was part of their gleaning sites. Fishers noted adverse impacts of mining causeway such as the loss of lobster fry fishery, drastic decline of fish catch due to turbid water, loss of recreation as the beach water become murky and caused skin irritation and diseases, dust pollution from the stockpile of mining and transport of mined soil, and noise pollution from 24/7 operations of trucks. It is recommended that economic valuation of affected marine ecosystems be conducted for the mining company to compensate for the loss. Also, sustainable livelihood should be provided to affected communities.

Keywords: degradation, dust pollution, gleaning, lobster trap, siltation

LENGTH-WEIGHT RELATIONSHIP OF THREE GOATFISHES (*Parupeneus* spp.*)* LANDED IN CITY FISH PORT, BARANGAY MATAHIMIK, PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

Length-weight relationships (LWR) are essential in providing insight about fish growth, overall health and fitness. However, LWR has only been reported for a few fish species. For goat fishes, only five of the 13 species in Palawan have LWR data. This study analyzes the length-weight relationship of three goatfish species belonging to the same genera (*Parupeneus*) landed at the City Fishport, Bgy. Matahimik, Puerto Princesa. Data were collected from July 2024 to January 2025. The fish's total length (cm) and weight (g) were measured using an improvised measuring board and a digital weighing scale. A total of 383 individual species belonging to one genus were sampled. The raw data of fish samples, the total length and weight were log-transformed before carrying out a regression analysis using the Microsoft excel. Through MS excel, the scatter graph including a trend line and regression equation has been generated to show the relationship between length and weight of the fish sample. For the raw data, the relationship is best represented by the power regression with the formula $W = a^* L^b$. The value of the parameter *b* ranged from 2.65 to 3.02. The correlation coefficients (r) ranged from 0.97 for *P. multifasciatus* to 0.98 for both *P. barberinus* and *P. bifasciatus*, indicating a strong positive relationship between total length and weight. The largest lengths and weights of three goatfish species were recorded as follows: *Parupeneus barberinus* (32.4 cm and 450 g), *P. multifasciatus* (31.5 cm and 397 g), and *P. bifasciatus* (31.5 cm and 393 g). This study is an addition to the known LWR of fishes in Palawan. Further studies are needed to fully document the LWR among fishes in Palawan.

Keywords: goatfish, length-weight relationship, *Parupeneus* spp., Puerto Princesa

LENGTH-WEIGHT RELATIONSHIP OF THREE GROUPERS (EPINEPHELIDAE*)* LANDED IN CITY FISHPORT OF BARANGAY MATAHIMIK, PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

Length-weight relationship (LWR) studies are important in understanding the biology of fish species. This study investigates the LWR of three species of groupers *Epinephelus malabaricus, Epinephelus areolatus* and *Epinephelus coioides.* Data were collected between July 2024 and January 2025 at the fish port in brgy. Matahimik in Puerto Princesa City. The fish's total length (cm) and weight (g) were measured with an improvised measuring board and a digital weighing scale. A total of 309 individuals were sampled. The MS Excel statistical program was used to perform a regression analysis after the raw data's weight and total length had been log-transformed. To illustrate the relationship between length and weight, a scatter plot containing a trend line and regression equation has been created for each species using the raw and log-transformed data. The power regression, which uses the formula $W = a^* L^b$, best captures the relationship for the raw data. The parameter b had values between 2.22 and 3.09 The range of correlation coefficients (r) range from 0.74 for *E. coioides* to 0.96 for *E. malabaricus* and 0.99 for *E.areolatus,* suggesting a robust positive correlation between weight and overall length. The maximum length (cm) and weight (g) of three *Epinephelus* species were also determined: *Epinephelus malabaricus* (41.5 cm and 1,459 g); *E. areolatus* (39 cm and 685 g) and *E. coioides* (36.4cm and 540 g). This study makes a total of 15 grouper species with known length-weight relationship in Palawan. There is a need to have a complete record of LWR among fishes in Palawan.

Keywords: *Epinephelus* spp., grouper, length-weight relationship, Puerto Princesa

MESO- AND MICROPLASTIC OCCURRENCE IN THE GASTROINTESTINAL TRACT OF YELLOWFIN TUNA (*Thunnus albacares,* Bonnaterre, 1788) FROM THE FISH-LANDING SITE IN TABACO CITY, ALBAY, BICOL, PHILIPPINES

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ABSTRACT

Plastic pollution has been an increasing problem worldwide due to its extensive use coupled with poor waste management. Persistent plastic pollutants such as meso- and microplastics are observed in various marine habitats, ingested by organisms and potentially consumed by humans. This study assessed the occurrence of meso- and microplastics ingested by juvenile and adult yellowfin tunas collected from the Fish-landing site in Tabaco City, Albay. It also characterized the MPs in terms of shape, size and polymer type. A descriptive method was used to assess the occurrence and characterization of meso- and microplastics present in 60 gastrointestinal tracts of yellowfin tunas. Laboratory procedures to process the samples include digestion of GI tracts, filtration, microscopy and fourier-transform infrared spectroscopy (FT-IR) to verify the polymer type of the collected plastics. Plastic particles were found in 23.33% of the samples, 78.57% of which were in adult while 21.43% were from juvenile tunas. A total of 23 plastic pieces were collected, 47.83% were mesoplastics while 52.17% were microplastics. In both juvenile and adult samples, fragments were the most abundant in terms of appearance followed by fibers and films. Pellets and foams were not found in the study. FT-IR spectroscopy identified the collected plastic polymers as ethylene vinyl acetate (EVA), high-density polyethylene (HDPE), polyethylene terephthalate (PETE), polypropylene (PP) and nylon. It was confirmed that meso- and microplastics are ingested by *T. albacares* with adults ingesting higher quantity compared to juveniles. Further studies are needed to establish possible consequences of plastic ingestion in the organism's growth as well as its budding hazard on food safety and human health.

Keywords: FT-IR, mesoplastic, microplastic, plastic polymer, yellowfin tuna

MICROALGAL ASSEMBLAGES AND DISTRIBUTION IN RECREATIONAL WATERS OF BALABAC, PALAWAN, PHILIPPINES

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ABSTRACT

Microalgae serve as both the foundation of marine food webs and valuable indicators of water quality, providing critical insights into the health of recreational waters which are crucial for ensuring the safety of both local residents and tourists. This study assessed the assemblages and distribution of microalgae and their relation with the physicochemical parameters across four sites in the recreational waters of Balabac. An opportunistic sampling method was performed, and samples were collected by filtering 50 liters of seawater from four different islands, with three sampling stations on each island, during the daytime from December 27-30, 2024. Microscopic examination and identification revealed a total of 55 genera belonging to four major groups (Bacillariophyceae, Dinophyceae, Dictyochophyceae and Cyanophyceae), with the Bacillariophyceae or commonly known as diatoms being the dominant component of the microalgae. Five potentially toxic genera (*Alexandrium*, *Dinophysis*, *Nitzschia*, *Pseudo-nitzschia*, and *Scrippsiella*) were also observed during the sampling period. The results of this study showed that the composition of microalgae varied from one station to another. There is a significant difference in recorded temperatures among sampling sites while no significant differences in salinity and dissolved oxygen. Regular monitoring is needed to assess water quality to ensure the safety of recreational waters. The results of this study may serve as a guide for public health policies, particularly relevant as a baseline information for environmental monitoring.

Keywords: diatoms, dinoflagellates, harmful algal blooms, phytoplankton, water quality

MICROSCOPIC ALGAE IN A WARMING OCEAN: TEMPORAL VARIATION IN PHYTOPLANKTON COMMUNITY STRUCTURE IN SHARK FIN BAY MARINE PROTECTED AREA NETWORK, PALAWAN

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ABSTRACT

Monitoring phytoplankton can provide valuable insights into the overall health of marine ecosystems and help detect the potential occurrence of harmful and toxic microalgae. Despite their ecological significance in marine environments, studies on phytoplankton in Palawan remain limited. This study aimed to assess the water parameter profile, phytoplankton community structure, and the correlation between water physicochemical parameters and phytoplankton cell density. Conventional sampling techniques using a plankton net were employed, followed by microscopic identification and cell counting of phytoplankton. Statistical analyses were conducted using R software, considering data normality and variance homogeneity. Phytoplankton abundance, richness, and diversity were significantly lower in October, coinciding with the highest recorded temperature. Notably, in the same month, two potentially harmful armored dinoflagellates (*Tripos* and *Protoperidinium*) were among the dominant genera. Correlation analysis revealed a negative relationship between water temperature and diatoms, while dinoflagellates showed a positive correlation. These findings suggest that rising ocean temperatures may favor dinoflagellates, potentially increasing the risk of harmful algal blooms. Additionally, nine potentially toxic microalgae were identified, including three genera (*Alexandrium*, *Gymnodinium*, and *Pyrodinium*) known to cause paralytic shellfish poisoning. These results provide insights into the possible effects of ocean warming on microscopic algae in marine ecosystems. Regular and long-term monitoring is recommended, given the presence of potentially toxic microalgae in the area. The findings of this study could serve as valuable input for developing policies related to fisheries management and harmful algal bloom mitigation in Shark Fin Bay.

Keywords: harmful algal blooms, microalgae, red tide, Shark Fin Bay

MICROPLASTIC IN SEDIMENTS AND SEA CUCUMBER (*Holothuria atra*) IN MARINE PROTECTED AND NON-MARINE PROTECTED AREAS OF PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

Microplastic pollution poses a serious threat to marine ecosystems, particularly in sediment-dwelling organisms such as sea cucumbers. This study investigates microplastic (MP) contamination in marine protected areas (MPAs) and non-MPAs to assess its ecological impact and support conservation strategies. The study examines the presence, abundance, and characteristics of microplastics in sediments and *Holothuria atra* from selected MPA and Non-MPA in Puerto Princesa City, Palawan. It also evaluates differences in MPs between MPA and non-MPA and explores potential correlations with sea cucumber body weight. Sediments and sea cucumber samples were collected from an MPA and a non-MPA. Microplastics were extracted using digestion and flotation methods and analyzed for shape, color, and type. Statistical analyses, including t-test and ANOVA, were conducted to compare contamination levels and assess relationships with body weight. Microplastics were detected in all samples, with sediments exhibiting higher concentrations than sea cucumber tissues. Analysis of microplastic characteristics revealed fibers as the dominant shape, primarily blue in color, suggesting sources such as synthetic textiles and fishing gear. On sea cucumber MP contamination, specimens from non-MPA showed higher gut contamination levels than MPA, and no microplastics were found in the body wall of specimens from MPAs. Microplastic abundance did not correlate with body weight. Findings highlight the need for stricter plastic waste management, enhanced conservation efforts, and continuous monitoring of MPAs and non-MPAs. Future studies should incorporate advanced polymer identification techniques and assess the long-term effects of microplastic ingestion on marine organisms.

Keywords: *Holothuria atra*, marine pollution, MPAs, microplastics, sea cucumbers, sediments, waste management

MORPHOLOGY OF *Macrobrachium lar* IN EL NIDO, PALAWAN RIVER SYSTEM

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ABSTRACT

This aimed to contribute to the development of *Macrobrachium lar* breeders for captive spawning through providing information on the correct identification of the species using morphological characterization to complement the genetic identification of the species. This study specifically identified and labeled the external anatomy of male and female *M. lar*; and determined its morphological measurements. A total of 70 *M. lar* consisting of 49 males and 21 females were used in the study. The samples were taken from El Nido, Palawan River, and were stocked at the WPU hatchery. The morphological characteristics determined were the body weight, body length, abdomen length, carapace length, cheliped length, and telson length, rostrum length, 1st abdomen, 2nd abdomen, walking length, and antennae length. The species is dioecious. In general, the mean total body size of female M. lar was 56.48±31.00 and mean body weight of 21.00±0.15 while that of male was 115.00±18.00 and 28.00±0.09. The results indicated that the male is relatively bigger than the female species. In addition, the chelipeds of males are longer than those of females. It is recommended that more individuals will be surveyed to obtain substantial data to determine the length-weight relationship and the relative condition factor of *M. lar.*

Keywords: dioecious, freshwater prawn, morphological characterization, river

PERCEIVED IMPACTS OF CLIMATE CHANGE ON THE FOOD SECURITY OF THE COASTAL COMMUNITIES OF STA. LOURDES, PUERTO PRINCESA CITY, PALAWAN, PHILIPPINES

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ABSTRACT

This study aimed to investigate the perceived impact of climate change on food security in the coastal barangay of Sta. Lourdes, Puerto Princesa City, Palawan, Philippines. The study aimed to assess the demographic profile, climate change awareness, experienced impacts, and the relationship between experienced climate change impacts and perceived effects on food security in Sta. Lourdes, Puerto Princesa City. A total of 40 participants were included in the study, with a relatively even distribution in terms of sex and varied age ranges. Overall findings that most participants had completed high school education or lower, and their household income was predominantly low, categorizing them as poor. Results showed that 95.1% of respondents perceived climate change as changing, with the majority agreeing that it is caused by human activities. However, there were variations in opinions and awareness among the participants. Participants reported experiencing rough seas, excessive rainfall, sea surface temperatures, and higher sea levels compared to a decade ago. These findings highlight the influence of weather patterns and sea conditions on coastal communities' perception of climate change and its impact on food security. Thus, it is crucial to consider these factors when developing policies and strategies to mitigate the impact of climate change on food security in coastal communities. This study provides valuable insights into the perceptions and experiences of coastal communities in Palawan, Philippines, regarding climate change on food security, and could guide future research and interventions aimed at enhancing the resilience of these communities.

Keywords: availability, access, big waves, climate change, coastal communities, excessive rainfall, food security, perceived impact, sea surface temperature, sea level rise, stability, utilization

POPULATION DENSITY AND LENGTH-WEIGHT RELATIONSHIP OF MANILA CLAM *Ruditapes philippinarum* Linnaeus 1758 IN PASSAGE ISLAND, TAYTAY, PALAWAN

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ABSTRACT

The Manila clam *Ruditapes philippinarum* commonly known as "Karawkaw," is an ecologically and economically important bivalve species found in intertidal zones. However, baseline data on its population density and length-weight relationship in Passage Island, Taytay, Palawan, remain limited. This study aims to determine the population density and length-weight relationship of *R. philippinarum* in Passage Island, Taytay, Palawan. Field sampling was conducted in December 2024. A belt transect method was used, with quadrats placed along transects in three intertidal sites. Clams were collected through gleaning, and their shell length and wet weight were measured. Population density was calculated as individuals per square meter, while the length-weight relationship was analyzed using the power equation $W = aL^b$. The highest population density of *R. philippinarum* was recorded in Site 2 at 30.25 individuals per square meter, while Site 3 had the lowest at 16.75 individuals per square meter. The Length-Weight Relationship analysis showed a positive allometric growth pattern in which the weight increases faster than the length, as the *b* value is 3.325, which is greater than 3. The findings of this study provide valuable baseline data for resource management and conservation efforts in Passage Island. Further research is recommended to assess seasonal variations in population density and the potential impacts of environmental factors on the growth of *Ruditapes philippinarum*.

Keywords: intertidal gleaning, karawkaw, small-scale fisheries

PROFITABILITY AND SUSTAINABILITY OF TRADITIONAL FARMING OF SANDFISH *(Holothuria scabra)*

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ABSTRACT

Sea cucumber fishery is a common activity in the Northern part of Palawan. However, there is a lack of information regarding the profitability of sandfish farming particularly in Taytay, and no other studies on sea cucumber fishery in the area. Building on these gaps, this study was conducted to document the practices of traditional sandfish farming, determine the challenges faced by farmers, and determine its profitability. Data were gathered from 22 sea cucumber farmers through semi-structured survey interviews. The profitability was determined by calculating the Return of Investment (ROI). Results showed that traditional farming involves the use of pens, which are often rectangular in shape and made of locally available materials. The size varies but most farmers use a 100 m² size of pen. Farmers stock juveniles around 1,000 individuals measuring 10–12 cm. The grow out culture period ranges from 7 to 9 months. Harvesting is done manually, usually once a year. The average estimated income per harvest ranges from PhP 20,000 to PhP 30,000, with an average return on investment (ROI) between -10% and 25%. It appeared that 72.7% experienced financial losses due to several factors and challenges. The findings will serve as a measure to improve farming methods in order for them to become a profitable and sustainable livelihood in coastal areas.

Keywords: Return of investment, pen, juveniles, profit, stocking density**,** culture period, farming cycle, predation

SPAWNING, FECUNDITY AND FERTILITY OF GREEN MUSSEL *Perna viridis* ABOVE AMBIENT TEMPERATURE (30^{o}C)

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ABSTRACT

This study aims to determine the spawning potential of green mussel *Perna viridis* when exposed to temperature shock above ambient temperature(30^{o}C), which was recorded during the experiment. The fecundity and fertilization rate were determined adopting the breeding protocol of UP Visayas. Three (3) levels of temperature were used such as 30, 32, 34o C, for treatment I, II, III. Treatment I served as the control. Adult green mussels were taken from New Quinlo, Taytay, Palawan and transported to WPU-BMRS for the spawning experiment. Electric heater was used to attain the desired temperature for the experiment. A total of 225 adult green mussel was depurated, desiccated, and repacked to as low as 15^{o}C for 30 min, then distributed randomly to the spawning basin following the completely randomized design. Spawning started 30 mins after the green mussel was exposed to the target temperature. The male released milky white sperm that induced the released of orange colored egg of female green mussels. Each of the spawners were transferred individually into prepared cups to collect the eggs or the sperm. After an hour, the egg and sperm were collected. Sperm cells were combined with eggs at ratio of 50:1 within an hour after released and the mixture was left to fertilize. Results indicated that green mussel released sperms ranging from 1079 to 1369 sperms. Among the treatment, no significant difference ($P>0.05$) was observed between 30^{o}C and 32^{o}C but there was significant difference ($P<0.05$) with 34^{o}C. No eggs were released by female green mussel at ambient temperature but an equal mean was recorded for those exposed in temperature 32^{o}C and 34^{o}C. Fertilization rate (%) was significant different ($P<0.05$) for treatment 2 and 3. The result indicated that higher fertilization rate (%) requires relatively lower temperature 32^{o}C. The result of this study can be a basis to make necessary modification in the protocol by UPV to towards commercial hatchery production of green mussel in the Palawan condition. It is recommended to use not more than 32^{o}C to optimize hatching rate.

Keywords: aquaculture, breeder, fertilization, hatchery

STRESS-RELATED BEHAVIOUR OF ABALONE *Haliotis asinina* AT DIFFERENT TEMPERATURE LEVELS

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ABSTRACT

This study offers important insights for abalone farming. Temperature fluctuations are affecting the physiology and survival of these marine animals. Furthermore, it seeks to expand the limited information about the abalone *Haliotis asinina* temperature tolerance and behaviour. This study aims to describe the effect of varying temperature levels on the behaviour of *abalone adults and juveniles* and determine their optimum temperature range. The experiment was conducted over 24 hours and involved three temperature treatments: high (adult 34°C, juvenile 32°C), ambient (adult 29°C, juvenile 27°C) and low (adult 24°C, juvenile 22°C). The ambient temperature served as the control, reflecting natural seawater conditions. Each treatment had three replicates, randomly distributed for monitoring. Temperatures were frequently measured to ensure consistency, and behavioural changes in the abalone were observed and documented. The findings reveal that the ambient temperatures around 27°C - 29°C were optimal for normal functioning in abalone adults and juveniles. Deviations from this range, either elevated or reduced temperatures, induced stress-related behaviours such as reduced movement, slower righting times, and mantle contraction. These responses indicate that abalone adults and juveniles are susceptible to temperature changes outside their optimal range. Abalone adults can adjust or acclimatize to the elevated and reduced temperatures over time. Juvenile abalone can adjust to elevated or reduced temperatures temporarily; the longer they are exposed, the weaker they become. The study underscores the importance of maintaining stable and suitable temperature conditions in abalone aquaculture to promote health and productivity. This research highlights the vulnerability of abalone *H. asinina* to environmental stressors, emphasizing the need for effective environmental management in aquaculture systems, especially given the challenges posed by climate change. Future studies could focus on the long-term physiological impacts of temperature fluctuations and explore broader implications for sustainable aquaculture practices under changing oceanographic conditions.

Keywords: behaviour, mantle contraction, movement

COLLEGE OF PUBLIC ADMINISTRATION AND MANAGEMENT (CPAM) PAPERS

CLIENTS' SATISFACTION ON THE BUSINESS ONE STOP SHOP PROGRAM OF THE CITY GOVERNMENT OF PUERTO PRINCESA CITY, PALAWAN AMONG ACCOMMODATION ESTABLISHMENTS

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ABSTRACT

This study evaluated the satisfaction level of accommodation establishments in Puerto Princesa with the Business One Stop Shop (BOSS) Program implemented by the City Government of Puerto Princesa (CGPP). The objectives were: (1) analyze the socio-demographic characteristics of the respondents; (2) assess the satisfaction levels of accredited accommodation establishments in Puerto Princesa City with the implementation of BOSS; program(3) identify the challenges encountered by the respondents in the operation of BOSS program; (4) establish if there is a significant correlation between the socio-demographic profile of the respondents and their satisfaction level with the program, and the problems encountered. The research employed a descriptive research design and utilized a survey questionnaire to collect data from participants selected through a stratified random sampling method. The hypotheses were tested using Pearson correlation at significance levels of .05 and .01. The respondent's demographics revealed that most were single, females, aged 30-36 with a college degree, and holding managerial positions in the mabuhay accommodations industry. They showed satisfaction with the BOSS program, particularly in pre-registration, assessment and payment, and the release of business permits. While there were differing opinions on encountered problems, overall satisfaction ratings for the program remain satisfactory, contradicting the common perception of dissatisfaction. The analysis also found a significant correlation between respondents' demographics and their satisfaction levels, as well as a relationship between their positions and premise problems in the program's operation by the CGPP. The Business Permit and Licensing Office must ensure high satisfaction through continuous program monitoring. Regular surveys provide feedback for improvements, enabling proactive issue resolution and adaptation to business needs. Meanwhile, the CGPP must continuously innovate the BOSS Program to remain relevant. Embracing technological and regulatory changes will streamline processes and enhance business support. Additionally, accommodation establishments should actively participate in government programs to maximize benefits and improve services. Their feedback helps refine the BOSS Program for greater efficiency. This study highlights CGPP's commitment to a business-friendly environment, demonstrating its readiness to support ventures and partnerships. Further studies are encouraged to expand insights, validate findings, and contribute to the continuous improvement of business support programs.

Keywords: ease of doing business, educational research, stream line permit processes

FINANCIAL LITERACY OF MICROPRENEURS IN BARANGAY APORAWAN, ABORLAN, PALAWAN

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ABSTRACT

This study aimed to assess the level of financial literacy of entrepreneurs in Barangay Aporawan, Aborlan, Palawan. A descriptive-correlational research design was used in this study. Data were gathered from 50 micropreneurs using a survey questionnaire. Results of the study revealed that the microentrepreneurs were mostly 23-35 years old, female, Roman Catholic, Cebuanos, and had reached high school level. They were operating for around 15 years as a sole proprietorship business, with a capital of P183,199 or below. They ran a sari-sari store by themselves, and had an average monthly income of P1,000 - 55,799. The results revealed that almost all of them had no financial literacy training and just used newspapers, magazines, and TV programs on financial issues as their top source of financial literacy information. Their level of financial literacy was measured in terms of their level of financial knowledge (M=2.61; good), and level of financial skills (M=2.53; fair). A significant relationship between the level of financial literacy and the micropreneurs' age, sex, civil status, ethnic affiliation, educational attainment, type of business organization, number of employees/workers, financial literacy training/s attended, and sources of financial literacy information was found. Moreover, results indicated that unpaid customers' debts was the most common problem encountered by the micropreneurs. The researchers recommend that micropreneurs attend training and seminars relating to business establishment and management to boost their financial literacy.

Keywords: financial knowledge, financial literacy, financial skills micro-entrepreneurs, micropreneurs

PROCESS AND ISSUANCE OF SPECIAL PATENTS FOR PUBLIC SCHOOL SITES IN THE DIVISION OF PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

This study was conducted to assist schools in the Schools Division of Puerto Princesa City that have yet to secure Special Patents for their school sites. It focused on schools without land titles or those undergoing the titling process. Findings revealed that most untitled school sites are in rural areas, classified as agricultural land, and lack approved survey plans. The majority of the areas are between 10,000 and 19,999 square meters, with proof of possession primarily through deeds of donation, and have existed for 30 to 39 years. Schools typically enrol 100 to 199 students and have 10 or fewer teachers. The level of awareness and preparation for Special Patent application was deemed satisfactory, yet many school heads faced difficulties in obtaining necessary certifications and approvals. Additionally, challenges such as bureaucratic delays, lack of access to updated land records, and limited technical knowledge among school administrators hindered the process. Statistical tests indicated that school location does not significantly impact awareness levels; however, awareness is influenced by land survey status and years of occupancy. Thus, a well-informed school head regarding their school's history and land status is crucial for efficient titling processes.

Keywords: level of awareness, number of years of occupancy, process and issuance of special patent, status of land survey

POSTER PRESENTATIONS, WPU-PPC

COLLEGE OF FISHERIES AND NATURAL SCIENCES (CFiNS) POSTERS

ASSESSMENT OF MARINE PHYTOPLANKTON IN SELECTED RECREATIONAL WATERS OF PUERTO PRINCESA CITY, PALAWAN

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ABSTRACT

Phytoplankton are microscopic algae that serve as bioindicators of water quality in aquatic ecosystems. They can also signal the presence of harmful algal blooms (HABs), which may pose health risks to humans, particularly those exposed to recreational waters. This study assessed the physicochemical parameters of water at the sampling stations and analyzed the composition and distribution of marine phytoplankton. Additionally, it identified potential harmful algal bloom (HAB) taxa. Water samples were collected using the bucket method from three sampling stations—Baywalk, Hartman, and Pristine Beach—during January and February 2025. On-site measurements were taken for temperature (°C), salinity (ppt), and dissolved oxygen (mg/L). Potentially toxic phytoplankton were identified based on the IOC-UNESCO Taxonomic Reference List of Harmful Microalgae. Significant differences ($P < 0.05$) were observed among the sampling stations in terms of temperature and salinity. Pristine Beach recorded the highest temperature and salinity, which coincides with a greater number of phytoplankton genera. A total of 30 genera were identified, including diatoms, dinoflagellates, and cyanobacteria. Among these, two HAB genera—*Pseudo-nitzschia* sp. and *Dinophysis* sp.—were detected. These genera are known to produce toxins responsible for amnesic and diarrhetic shellfish poisoning. The findings of this study provide baseline data on marine phytoplankton, particularly potentially toxic microalgae, in the recreational waters of Puerto Princesa City. The presence of amnesic and diarrhetic shellfish poisoning taxa suggests that HAB monitoring in Puerto Princesa Bay should not be limited to paralytic shellfish poisoning species.

Keywords: amnesic poisoning, diarrhetic poisoning, dinoflagellates, HABs, toxic microalgae

BASELINE ASSESSMENT OF DIAMONDBACK SQUID *Thysanoteuthis rhombus* (Troschel, 1857) FISHERY IN RIZAL, PALAWAN, PHILIPPINES

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ABSTRACT

The diamondback squid, *Thysanoteuthis rhombus* (Troschel, 1857), locally known as "dalupapa," is a highly valued marine species commonly landed in Rizal, a southwestern municipality in Palawan, Philippines. However, essential fishing information remains limited, which is crucial for its conservation and management. This study provides baseline data on the diamondback squid fishery, specifically focusing on fishing time, seasonality, catch per unit effort (CPUE), jig-set characteristics, and fishing grounds. Data were collected through face-to-face interviews using printed questionnaires, involving 36 diamondback squid fishers and one local buyer. All data were processed in MS Excel, while fishing grounds were mapped using QGIS software. The fishing time encompasses the deployment of jig-sets, which begins between 3:00 am and 6:00 am, with retrieval occurring between 1:00 pm and 11:00 pm, resulting in a total soaking time of 9 to 18 hours. Commonly used bait includes alumahan (small mackerel), bangsi (flying fish), and diamondback squid fins. The number of jig-sets used ranges from 52 to 160, capturing between 35 and 400 individuals (200 to 1,000 kg) per operation. Fishing operations last between 5 and 10 days, with total fishing hours ranging from 54 to 126 hours. The fishing season extends from February to November, peaking between May and October. The CPUE of diamondback squid fishing ranges from 0.03 to 0.08 kg per jig-set per total fishing hour. Jig-set characteristics include two jiggers attached to a hanger, with a mainline connected to three styrofoam buoys. Most fishing grounds are located in the southwestern waters of Palawan. Further research is recommended to better understand the fishing information of the diamondback squid fishery in Rizal, Palawan, particularly in post-harvest processing and the length-weight relationship of the species.

Keywords: fishing ground, giant squid, seasonality, southwest Palawan, squid jig gear

BEHAVIOR OF ABALONE *Haliotis asinina* AT DIFFERENT SALINITY LEVELS

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ABSTRACT

Understanding how stress impacts the physiology and behaviour of abalone *Haliotis asinina* adults and juveniles might be helpful to farmers in developing farming methods that minimize stress, increase productivity, and ensure healthy and high-quality abalone. This study aims to describe the behaviour of abalone adults and juveniles exposed to different salinity levels. Abalone adult and juvenile individuals were investigated for 24 hours in the laboratory at different salinity levels of 27 ppt, 32 ppt, and 37 ppt. Three different data sets on righting movement, movement tracking, and mantle condition were gathered from the behaviour of abalone adults and juveniles. Data were analysed using descriptive analysis and one-way ANOVA. Major changes in behaviour of abalone juveniles and adults were observed for 24 hours of monitoring in the salinity level of 37 ppt, but there is a minor change in 27 ppt. As osmoconformers, abalone can quickly adapt to their environment, depending on when the abalone is exposed to such salinity level. Although they are exposed to high and low salinity levels, this can cause stress and various factors affecting their vulnerability. Results of this study indicated that areas with such salinity level were non-favourable for maintaining stressed free water quality, especially when these behaviours are seen in a culturing facility. Further study regarding the behaviour of abalone in different salinity levels with a combination of temperature changes is recommended, relating the condition to a potential climate change scenario.

Keywords: abalone behavior, abalone culture, climate change, different salinity levels, stress

CATCH COMPOSITION, SPECIES RICHNESS, AND ABUNDANCE BASED ON MOON PHASE OF FISH CORRAL AT BARANGAY PANCOL, TAYTAY, PALAWAN

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ABSTRACT

Fish corrals are one of the most common stationary fishing gears used in Brgy. Pancol, Taytay, Palawan. However, no information is available about the catch composition or other relevant data which can be used as a basis in evaluating the fish corral fishery in the area. This study assessed various species caught up to the species level using external morphology, to determine species richness and abundance in different moon phases and the frequency of species caught in fish corral. An actual catch sampling was used with two fish corrals, and data was gathered twice during full moon and new moon phase only. The field guide of Coastal Fishes in Palawan (Gonzales 2013), a guide to the Shore fishes of the Tropical Eastern Pacific of Allen et al. (2015), and FishBase, a free online fish database was used to identify the catch. The overall findings revealed that during full moon, there are 11 fish species and 2 mollusk species, while during full moon, there's only 1 fish species and 2 mollusk species. The total number of species caught in two different moon phases; full moon has a highest number of species caught by *baklad* in Brgy. Pancol, Taytay, Palawan and in both moon phases, species under Loliginidae are the most abundant. It indicates that the coastal areas harbor low diversity of fish species. Conducting a similar study connected with the weather condition in the sampling area is a must, to determine if there's a difference in catch composition, species richness, and relative abundance of fish caught by *baklad* during rainy and sunny season.

Keywords: abundance, catch composition, fish corral, moon phases, species richness

COLOR EFFECTIVENESS OF FIVE DIFFERENT JERK BAIT SINKING MINNOW ARTIFICIAL LURES USING A ROD-AND-REEL SET UP IN REEF AREA OF BARANGAY POBLACION, SAN VICENTE, PALAWAN

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ABSTRACT

Recreational fishing, particularly the use of rod-and-reel set up with artificial lures, has gained popularity in the Philippines after the COVID-19 pandemic. It has become a common pastime, a source of fish, and a popular content theme on platforms such as TikTok and Facebook. Despite its growing popularity, no studies have been conducted on the effectiveness of different artificial lure colors in terms of catch rate and species composition. This study aimed to gather baseline information on color effectiveness, retrieval techniques, species composition, and the size of fishes caught using five different colors of jerkbait sinking minnow artificial lures. Experimental fishing was conducted in a 0.9-1.5 m reef area of Barangay Poblacion, San Vicente, Palawan, using a 1.8-meter fishing rod paired with a 4,000-series reel, a 10-15 kg capacity braided line, and five different colors of jerkbait sinking minnows (redhead, yellowhead, pink, light green, and blue), each measuring 7 cm in length and weighing 8 g. Each color of artificial lure was tested using different retrieval techniques over a 15-day period (three days per lure) from December 11 to 25, 2024. All fish caught were measured, photo-documented, and identified. Among the tested lures, the light green lure was the most effective, attracting 13 species and 29 individuals. The fast retrieval technique yielded the highest catch, with 3 to 19 individuals caught per trial. A total of 83 fish, representing 21 species from 10 families, were caught using the five artificial lure colors. The most dominant species belonged to the family Epinephelidae (5 species), while the most abundant family was Carangidae, with 33 individuals. Fish lengths ranged from 12 to 35 cm, with the majority (54 individuals) measuring 16 to 19 cm. Fish weights varied from 29 to 262 g, with most (23 individuals) weighing between 77 and 100 g. Further studies should explore the effectiveness of other types of artificial lures in the same fishing site. Additionally, factors such as time of day, environmental conditions, and presence of prey should be examined to assess their influence on lure performance.

Keywords: Carangidae, Epinephelidae, northwest Palawan, recreational fishing, reef fishes

CONSUMPTION RATE OF ABALONE *Haliotis asinina* ON SELECTED MACROALGAE

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ABSTRACT

The province of Palawan is one of the producers of farmed seaweeds in the Philippines, which may serve as food sources for abalone culture. This study aims to determine the food consumption rate of juvenile abalone *Haliotis asinina* using farmed macroalgae in a laboratory setting to enhance feeding strategies for abalone farmers. The experiment was conducted for 48 hours, with data on food consumption collected every 12 hours. Nine abalone juveniles, ranging from 19.4 mm to 26.1 mm in shell length and 1.20 g to 3.0 g in weight, were starved for 24 hours before the feeding experiment. Each abalone was placed in an individual glass bowl, and 10 g of each macroalga was provided as seaweed food: *Gracilaria* as the control, *Kappaphycus striatum* as Treatment 1, and *Kappaphycus alvarezii* as Treatment 2. The results showed a 100% survival rate of abalone across all treatment groups. Abalone juveniles in the control (*Gracilaria*) had a higher consumption rate at 0.04 g/h than those with *K. striatum* and *K. alvarezii* food at 0.02 g/h. There was no significant difference in the mean consumption rate of abalone juveniles with *K. striatum* and *K. alvarezii* food ($P<0.05$). Abalone juveniles fed *Gracilaria* were more active based on movement tracking than those fed *Kappaphycus* species. Additionally, it was observed that abalone juveniles preferred to graze on the soft tips of the macroalgae. The findings suggest that *Kappaphycus* species are not suitable food for abalone juveniles. We recommend studying using other local macroalgae as food for abalone.

Keywords: consumption rate, farmed seaweeds, *Gracilaria, Kappaphycus striatum, Kappaphycus alvarezii,* survival rate behavior, soft tips

DIVERSITY AND COMMUNITY STRUCTURE OF SEAGRASS AT ARRECIFE ISLAND, HONDA BAY, PALAWAN, PHILIPPINES

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ABSTRACT

Seagrass ecosystems provide essential habitats for marine organisms, yet they face environmental threats. This study examines their diversity and community structure to support conservation efforts. Specifically, this research assessed the species composition, percent cover, and macroinvertebrate diversity, particularly sea cucumbers, in seagrass beds at Arrecife Island, Honda Bay, Palawan, Philippines. Sampling was conducted on April 14–15, 2018, at low tide using the transect-quadrat method. Percent cover was categorized based on dominance classification, and diversity indices were computed. Five seagrass species were identified: *Cymodocea rotundata, Enhalus acoroides, Halodule uninervis, Syringodium isoetifolium,* and *Thalassia hemprichii*, with *T. hemprichii* being the most dominant (59.73 ± 9.30% cover). The seagrass bed was classified as "fair" (25.5–50.4% cover). Seven macroinvertebrate species were recorded, with *Holothuria atra* having the highest density (167 ind./250 m²). Diversity indices indicated moderate species diversity and evenness, with *H. atra* dominating sea cucumber populations. While seagrass ecosystems play a crucial role in biodiversity conservation, threats such as siltation, pollution, and tourism disturbances were evident, and necessitates urgent conservation measures. Resort owners and employees should actively engage in habitat protection. Periodic reassessments every five years, encompassing the adjacent seagrass communities, are recommended to monitor ecological changes and guide conservation strategies to sustain biodiversity and ecosystem services.

Keywords: biodiversity, macroinvertebrates, marine conservation, sea cucumber, seagrass ecosystem

DIVERSITY AND TAXONOMY OF GOATFISHES (MULLIDAE) FROM SELECTED AREAS OF PALAWAN, PHILIPPINES

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ABSTRACT

Goatfishes (Mullidae) are among the economically important fish families caught in the country's small-scale fisheries. However, knowledge on their diversity and taxonomy remains limited due to the lack of comprehensive studies, particularly in biodiversity hotspots like Palawan. To address this gap, this study aims to determine the diversity and taxonomy of goatfishes (Mullidae) from selected areas in Palawan. Samples were collected from selected public fish markets of Puerto Princesa City and Aborlan between January and March 2025. Additional samples from the WPU-College of Fisheries and Natural Sciences Specimen Room were also examined. Samples were photo-documented, and the morphological (i.e., morphometric, meristic) data were collected thereafter. Samples were then fixed with 10% formalin and later transferred to 70% ethanol for long-term storage. Of the 17 species reported in Palawan waters, this study identified and examined 14 species, composed of the genera *Parupeneus* (9 species), *Upeneus* (3 species), and *Mulloidichthys* (2 species). The morphological features of the samples examined were consistent with previously reported studies. A better understanding of goatfish diversity and taxonomy will contribute to more effective management strategies, particularly in areas experiencing high fishing pressure.

Keywords: ichthyology, *Mulloidichthys, Parupeneus,* saramulyete, *Upeneus,* western Pacific

EXPANSION OF 'RED TIDE' IN PALAWAN? FIRST REPORT ON THE OCCURRENCE AND DISTRIBUTION OF TOXIC *Pyrodinium bahamense* IN SHARK FIN BAY, PALAWAN, PHILIPPINES

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ABSTRACT

Harmful Algal Blooms (HABs) pose a significant threat to many coastal communities worldwide, with their spatial distribution steadily increasing over the years. In the Philippines, *Pyrodinium bahamense* has been identified as the culprit behind paralytic shellfish poisoning. Therefore, it is necessary to monitor *P. bahamense* to ensure public safety during blooms. Moreover, although “red tide” is regularly monitored in three major bays in Palawan, there are still no well-documented study of *P. bahamense* in the province. This study aimed to document and map the occurrence, abundance, and distribution of *P. bahamense* in the Shark Fin Bay Marine Protected Area Network. *Pyrodinium bahamense* samples were collected using horizontal plankton net tows. Samples were morphologically identified under a compound microscope and counted using a Sedgewick-Rafter counting chamber. Cell density was mapped using QGIS software, while correlation analysis between water physicochemical parameters and *P. bahamense* cell density was conducted using R software. Results revealed the presence of *P. bahamense* in all six sampling sites, with mean cell density count ranging from 15 to 442 cells L^{-1}. In addition, the measured water physicochemical parameters have no significant correlation ($P > 0.05$) with cell density, suggesting other factors could potentially influence the abundance and spatial distribution of the species in the area. Further monitoring is recommended to better understand the bloom dynamics of *P. bahamense* in Palawan, which could inform policies on harmful algal bloom management and public health safety.

Keywords: dinoflagellate, harmful algal blooms, paralytic shellfish poisoning, red tide

FIRST ATTEMPT ON SPAWNING OF NON-CONDITIONED SANDFISH (*Holothuria scabra*) BROODSTOCK AT BINDUYAN MARINE RESEARCH STATION

Denz Ryl L. Herrera[1,2], Gladys Hannah S. Escalante[1], Hannah Mae T. Catalayban[1], Lucio B. Ardines Jr. [1,2], Riza G. San Juan[1,3], and Jean Beth S. Jontila[1,2]

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ABSTRACT

The international demand for Sandfish (*Holothuria scabra*) products had competed with its availability both in the wild and in mariculture produce. On the other hand, Palawan is one of the key areas rich in *H. scabra* fishery making it a future hotspot for sea cucumber culture and production. Aside from stock unavailability, collection, transport, and conditioning of broodstock were financially demanding. Hence, the spawning of unconditioned broodstock was performed to determine the potential to shorten the spawning procedure. Broodstock sourcing was done in Roxas, Palawan where 30 mature and healthy sandfish were collected and transported to Binduyan Marine Research Station (BMRS). Spawning was done during a full moon to mimic natural cues. The spawning procedure was done by systematically inflicting stress on broodstock wherein they were subjected to a 30-minute dessication process. Then, thermal stimulation was applied by gradually adding heated seawater up to 33 degrees Celsius. Broodstock were then carefully transferred into spawning tanks for the actual spawning at an ambient room temperature. Pre-spawning behaviors were observed such as continuous rolling and curling at the bottom of the spawning tank. Male sandfish were first to release the milt where some of them were removed from the spawning tanks to avoid over-fertilization. After two hours, females were observed to react to sperm release by spewing yellowish fluid full of eggs. A total of 11 sandfish broodstock (36.33%) out of 30 individuals spawned with a 3:6 ratio of females to males, respectively. The size of spawned individuals ranged from 150 grams to 300 grams with an average weight of 254.54 g. Therefore, the first attempt at spawning in an intensive mariculture setting such as the BMRS was done successfully. However, future replication of the method is recommended to confirm its effectiveness.

Keywords: spawning, unconditioned broodstock, thermal stimulation, mariculture, pre-spawning behaviors

ICHTHYOLOGICAL DIVERSITY OF PALAWAN, PHILIPPINES

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ABSTRACT

Palawan, located within the Coral Triangle, is a biodiversity hotspot with extensive coastal and freshwater habitats that support a highly diverse fish fauna. However, the number of fish species in Palawan remains uncertain due to limited studies. This research aimed to assess fish diversity in Palawan, Philippines that can be used for formulation management measures. Multiple methods were used to determine the species diversity: underwater visual censuses (UVC), market and landing site surveys, river and stream sampling, and meta-analysis. Surveys were conducted across 156 reef sites, 11 fish markets and landing sites, 15 rivers and streams, including the Puerto Princesa Subterranean River (PPSR) - one of the Seven Wonders of Nature. Collected samples were identified to the species level through morphological examination and DNA barcoding. A total of 1,647 fish species were recorded across three classes, 58 orders, 182 families, and 578 genera. This also include 155 species described from Palawan waters. Among marine fishes, 1,547 species were documented through UVC and literature reviews, with 400 species DNA barcoded and 70 newly reported for Palawan. In inland waters, 138 species from 32 families were identified, including two new Philippine records (*Barbonymus* cf. *collingwoodi, Giuris tolsoni*) and two potentially undescribed species. Additionally, five previously unreported species were collected in PPSR, including the newly described *Uropterygius hades*. These findings highlight Palawan's rich ichthyofaunal diversity and emphasize the urgent need for conservation efforts, particularly for endemic species facing threats from human activities and climate change.

Keywords: biodiversity conservation, coral reefs, fish diversity, last frontier, marine biodiversity

MULTIVARIATE ANALYSIS OF THE PHYTOPLANKTON COMMUNITY IN PUERTO BAY, PALAWAN, PHILIPPINES

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ABSTRACT

Phytoplankton are primary producers that influence ecological interactions and biodiversity. Understanding their community structure helps assess environmental health and potential stressors. This study applied multivariate statistical approaches to evaluate phytoplankton biodiversity, density, and community structure in Puerto Bay, Palawan, Philippines. Phytoplankton and physicochemical water samples were collected from three sampling stations between March and April 2023. Water quality parameters, species identification, and statistical analyses, including Bray-Curtis similarity, Similarity Profile (SIMPROF), Similarity Percentage (SIMPER), and Biota-Environment (BIOENV) analysis, were conducted. Water conditions showed stable temperatures, slightly acidic to neutral pH, and good oxygenation. A total of 30 phytoplankton species were identified, with diatoms (73.33%), particularly *Chaetoceros* sp., dominating. Phytoplankton density increased from March to April 2023 (31,889 cells L^{-1}). Caña Island had the highest species richness (19) and abundance (521). Negative correlations were observed between phytoplankton density and turbidity ($r=-0.7122$, $p<0.05$), pH ($r=-0.6436$, $p<0.05$), and temperature ($r=-0.1463$, $p<0.05$), indicating potential environmental stressors. Bray-Curtis similarity and SIMPROF grouped the stations into two clusters, with SIMPER analysis revealing Caña Island and Brgy. Sicsican had 31.77% intragroup similarity. BIOENV analysis showed temperature had the strongest correlation with species composition (0.5875), while temperature and pH combined had a moderate correlation (0.5431). Findings highlight phytoplankton's role in marine ecosystems and emphasize the need for monitoring environmental parameters affecting biodiversity. This study informs conservation strategies and sustainable management of Puerto Bay's marine resources.

Keywords: phytoplankton, bray-curtis similarity, marine conservation, environmental stressors, marine biodiversity

SPECIES COMPOSITION AND ABUNDANCE OF FRESHWATER CRABS IN TAMPISAW STREAM, BAGONG BAYAN, PUERTO PRINCESA CITY, PALAWAN, PHILIPPINES

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ABSTRACT

Freshwater crabs are diverse crustaceans that inhabit clean water. They are often given lesser attention compared to their marine relatives, resulting in a lower number of species recorded and very limited data on their abundance. This study was conducted to assess the species composition and abundance of freshwater crabs (FWC) in Tampisaw Stream, Brgy. Bagong Bayan, Puerto Princesa City, Palawan. Samples were collected using baited funnel traps and manual collections (handpicking) between February and March 2025. Three stations within the stream were established: upstream, middle, and low stream. Samples collected were placed in a styrofoam box prior to transport to laboratory for identification and further analysis. A total of 30 individuals from two species (i.e., *Parathelpusa rasilis, Insulamon palawanense)* were collected from different stations. Freshwater crabs were collected in all stations, with the “upstream” station having the highest species diversity and abundance. The samples are male-dominated, with apparent dominance of different life stages in each station which is attributed to the habitat characteristics. This study contributes to limited studies on FWC diversity and abundance in Palawan Island. A comprehensive assessment of FWC in the region is necessary for understanding their diversity and population status, which can be used for crafting conservation measures and their management strategies.

Keywords: aquatic biodiversity, freshwater fauna, Parathelphusidae, Potamidae

SPECIES COMPOSITION, POPULATION DENSITY, AND SIZE STRUCTURE OF COMMERCIALLY HARVESTED BIVALVES IN BARANGAY BERONG, QUEZON, PALAWAN

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ABSTRACT

Bivalves play a crucial role in aquatic ecosystems and as a source of food for coastal communities, however, there is limited information about the status of these resources which is essential for proposing conservation measures. This study aims to evaluate the species composition, population density, and size structure of commercially harvested bivalves in Barangay Berong, Quezon, Palawan. A field survey was conducted using transect survey and documentation of the species collected by the gleaners. Species identification was performed through morphology-based classification, while population density was calculated per square meter. The shell length of each species was measured using calipers. Data were analyzed using Jamovi. The study recorded four bivalve species belonging to three families: *Asaphis violascens* (Cyrenidae), *Mytilus edulis* (Mytilidae), *Ruditapes philippinarum*, and *Ruditapes variegatus* (both from Veneridae). Population density varied across sites, with some species showing higher abundance than others. Size structure analysis revealed potential sustainability concerns, as smaller individuals dominated some populations, suggesting high fishing pressure on mature bivalves. The findings underscore the need for sustainable harvesting practices, including the establishment of size limits, seasonal closures, and habitat conservation measures. Policymakers and fisheries managers should implement regulatory frameworks to ensure the long-term viability of bivalve populations and prevent over exploitation.

Keywords: aquatic biology, bivalves, fisheries management, population density, species composition, sustainable harvesting

COLLEGE OF EDUCATION (CED) POSTERS

SCHOOL IMPROVEMENT PLAN OF ROXAS SOUTH DISTRICT, DIVISION OF PALAWAN

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ABSTRACT

The school administrators, teachers, and school planning teams contribute to SIP implementation and how their roles impact the overall effectiveness of school programs. This study aimed to assess the capabilities, practices, and challenges encountered in implementing the School Improvement Plan (SIP) in the Roxas South District, Division of Palawan. A total of 21 school heads, 158 teachers, and 105 school planning team members participated in the study. Data were collected using researcher-made survey instruments and analyzed using statistical methods such as mean, frequency, percentage, rank, Spearman's rho correlation, and the Kruskal-Wallis H test. Findings revealed that school administrators' capabilities positively influence the successful execution of school programs. Their commitment to enhancing educational opportunities is evident in their focus on continuous teacher development, high-quality instruction, and emphasis on literacy and numeracy skills. Moreover, administrators play a crucial role in fostering a child-friendly school environment, ensuring efficient resource allocation, and aligning with the Department of Education's mission. However, the study also identified key challenges in SIP implementation, including resistance to change and the need for effective communication, support, and strategic planning. The results highlight the importance of significant investments during the preparatory phase to ensure proper planning, resource allocation, and goal alignment. Based on these findings, the study recommends strengthening professional development programs for school administrators and teachers, improving communication and support strategies to address resistance to change, and increasing investments in the early stages of SIP implementation to contribute to the successful execution of SIP goals and overall school improvement.

Keywords: best practices, challenges, school administrators, school improvement plan, stakeholders' engagement

SCHEDULE OF PRESENTATIONS AND PARALLEL SESSIONS

Competing (CED Audio Visual Hall; Parallel Session 1)
April 10, 2025
Moderator: Engr. Ryan Limco
Timer: Engr. Mark Jenno G. Denzon
Technical Staff: RIDE Staff

Time	Presenter	Title
Competing Professional		
10:30-10:40	Jeroselyn L. Llacuna	Assessment of Western Philippines University college building compliance with BP 344: Enhancing accessibility for person with disabilities
10:41-10:44		Q&A
10:45-10:55	Kristine Clarrise S. Canilla	Adopting eco-friendly construction materials for climate resilience insights from a community seminar in Puerto Princesa
10:56-10:59		Q&A
11:00-11:10	Reycielo B. Denzon	Pull-out strength of expansion anchor bolt embedded in polypropylene fiber reinforced concrete
11:11-11:14		Q&A
11:15-11:25	Anne Gallie P. Pablo	Factors selection and the development of fruit juice-loaded calcium-alginate microbeads
11:26-11:29		Q&A
11:30-11:40	Romel B. Panis	Utilization of contactless technology for student monitoring in the College of Engineering and Technology
11:41-11:44		Q&A
11:45-11:55	Marcos E. Bollido	Growth performance of broilers with fresh vermi supplementation in total confinement management system
11:56-11:59		Q&A
12:00-1:29	**LUNCH BREAK**	
1:30-1:40	Karen G. Madarcos	Factors affecting the research productivity of faculty members of the Western Philippines University – Puerto Princesa Campus, Palawan, Philippines
1:41-1:44		Q&A
1:45-1:55	Kristine Clarrise S. Canilla	Impact assessment of environmental management system instrument of ISO 14001
1:56-1:59		Q&A
2:00-2:10	Eva Nina B. Lopez	Green chemistry education among senior high school chemistry teachers: knowledge, perceptions, and level of integration
2:11-2:14		Q&A

Competing Undergraduate		
2:15-2:25	Mary Rose E. Estember	Climate change awareness and household food (in)security of Barangay Poblacion, Aborlan, Palawan
2:26-2:29		Q&A
2:30-2:40	Orlando P. Tango Jr.	Water quality and suitability assessment of Aborlan river for irrigation and animal consumption
2:41-2:44		Q&A
2:45-2:55	Anjilyn D. Garcellano	Permeametric geobiosand water filter for the Tau't Bato Tribe at Singnapan Valley, Ransang, Rizal, Palawan
2:56-2:59		Q&A

Parallel Session 2, Non-competing (EDUC Room)

Moderator: Engr. Ivane Ann Banlawe

Timer: Engr. Jessa C. Austria

Time	**Presenter**	**Title**
Non-competing		
10:30-10:40	Jaysoon D. Macmac	Corrosion behavior analysis of fiber reinforced self-compacting concrete using impressed current
10:41-10:44		Q&A
10:45-10:55	Kathleen Faith Evina	Species distribution model of *Shorea contorta* S. Vidal in the Philippines using Maximum Entropy
10:56-10:59		Q&A
11:00-11:10	Aprilyn B. Dimalaluan	Internal work environment of Western Philippines University
11:11-11:14		Q&A
11:15-11:25	Abraham Peralta Cea	Perceived corporate social responsibility (CSR) among travel and tour operators in Palawan
11:26-11:29		Q&A
11:30-11:40	Metchecana D. Peralta	Implementation of standard-based teacher preparation: a cross-country comparison
11:41-11:44		Q&A
11:45-11:55	Josefina S. Viernes	Online food delivery services quality's effect on customer loyalty
11:56-11:59		Q&A
12:00-1:29	**LUNCH BREAK**	
1:30-1:40	Karen Salve M. Maute	Understanding the gap: Faculty vs. student perceptions of LGBTQ+ community at Western Philippines University
1:41-1:44		Q&A
1:45-1:55	Lournalee S. Mullon	Perception and implementation of DepEd Order N0. 21, S. 203 among elementary schools in Quezon Southern District, Palawan
1:56-1:59		Q&A

2:00-2:10	Geneva, O. Dumdumaya	Level of implementation of duties and responsibilities of barangay anti-drug abuse council (BADAC) in the municipality of Narra, Palawan: basis for best practices identification
2:11-2:14		Q&A
2:15-2:25	Jowery R. Valentin	Assessment on the implementation of the supreme secondary government learner services: Basis for action plan development
2:26-2:29		Q&A
2:30-2:40	Daniel L. Pockias	Growth and yield performance of Chinese cabbage (*Brassica rapa* L. subsp. *chinensis*) as influenced by different rate of locally-made and commercial foliar fertilizer application
2:41-2:44		Q&A
2:45-2:55	Joy G. Ago	International organization for standardization procedures of Western Philippines University
2:56-2:59		Q&A

Parallel Session 3, Non-competing (CED Building)

Moderator: Engr. Cherrylene S. Lagan

Timer: Engr. Charlyn Mae Arzaga

Time	Presenter	Title
Non-competing		
10:30-10:40	Ronald T. Magbanua	Desk officers' management of barangay violence against women in Puerto Princesa City
10:41-10:44		Q&A
10:45-10:55	Reyna Mae C. Caintic	Growth and yield performance of stevia (*Stevia rebaudiana* Bertoni) using different nutrient solutions under hydroponic system
10:56-10:59		Q&A
11:00-11:10	Stephen T. Selma	Competitive anxiety in relation to mobile legends playing performance among e-sports players
11:11-11:14		Q&A
11:15-11:25	Richard T. Urmenita	Career interest exploration among social work students: basis for proposed career development program
11:26-11:29		Q&A
11:30-11:40	Danny C. Abrina	Development of mechanized ice cream mixer
11:41-11:44		Q&A
11:45-11:55	Maryshelle De Guzman	The reform and rehabilitation programs of prisoners in Iwahig Prison and Penal Farm in Puerto Princesa City, Palawan
11:56-11:59		Q&A
12:00-1:29	Lutgardo B. Alcantara	Dietary quality, food source and non-communicable disease risk factors in Palawan, Philippines
1:30-1:40		Q&A
1:41-1:44	**LUNCH BREAK**	
1:45-1:55	Danny C. Abrina	Evaluation of an improved mechanized coconut dehusker
1:56-1:59		Q&A
2:00-2:10	Lita B. Sopsop	Indigenous knowledge on climate change adaptations among the Tagbanuas in Cabigaan, Aborlan, Palawan, Philippines
2:11-2:14		Q&A

Competing Main Hall, AVH, WPU-PPC, Parallel Session 1
April 11, 2025

Moderator: Dr. Karen Salve M. Maute

Timer: Ms. Kryzell Ann J. Trestiza

Time	Presenter	Title
Competing Professional		
10:30-10:40	Mark Donnel D. Viernes	Research training needs assessment of teachers using P-R-I-O-R-I-Ty Framework: The case of Napsan
10:41-10:44		Q&A
10:45-10:55	Edgar P. Paalan	Microscopic algae in a warming ocean: temporal variation in phytoplankton community structure in Shark Fin Bay Marine Protected Area Network, Palawan
10:56-10:59		Q&A
11:00-11:10	Sheila Lou G. Pili	*Awareness and perceptions of sexual harassment and the safe spaces act among criminology students*
11:11-11:14		Q&A
11:15-11:25	Jean Beth S. Jontila	Impacts of mining causeway/port establishment on marine ecosystems and livelihood, health, and well-being of small-scale fishers in Brooke's Point, Palawan, Philippines
11:26-11:29		Q&A
11:30-11:40	Sheila Lou G. Pili	Evaluating the performance of Western Philippines University criminology graduates in the licensure examination for criminologists: a six-year trend analysis
11:41-11:44		Q&A
Competing Undergraduate		
11:45-11:55	Emalyn J. Sahawi	Microalgal assemblages and distribution in recreational waters of Balabac, Palawan, Philippines
11:56-11:59		Q&A
12:00-1:29	**LUNCH BREAK**	
1:30-1:40	Lightan L. Maravillas	Best practices in conducting meeting of Barangay Mauringuen community in Araceli Palawan: An appreciative inquiry
1:41-1:44		Q&A
1:45-1:55	Rechelle Joy M. Lumigpit	Profitability and sustainability of traditional farming of sandfish *(Holothuria scabra)*
1:56-1:59		Q&A
2:00-2:10	Alyssa M. Gallanosa	Stress-related behavior of abalone *Haliotis asinina at* different temperature levels
2:11-2:14		Q&A
2:15-2:25	Joselito Jr. M. Delos Reyes	Length-weight relationship of three goatfishes *(Parupeneus* spp*.)* landed in City Fish Port, Bgy. Matahimik, Puerto Princesa City, Palawan
2:26-2:29		Q&A

Competing MS/PhD		
2:30-2:40	Nikki P. Lacubtan	Microplastic in sediment and sea cucumber (*Holothuria atra*) in marine protected and non-marine protected areas of Puerto Princesa City, Palawan
2:41-2:44		Q&A
2:45-2:55	Avien Ynna M. Hasan	Bioaccumulation and distribution of trace metals in the primary trophic level of Puerto Princesa Bay, Palawan
2:56-2:59		Q&A
Non-Competing		
3:00-3:10	Salazar, Claribel B.	A review on set net (Lambakalad/Otoshi-Ami) fishery in the Philippines
3:11-3:14		Q&A

Non-competing
(Parallel Session 2; ABBA Conference Room 1, WPU-PPC)
April 11, 2025
Moderator: Ms. Cecila Malolos
Timer: Mr. Jovan A. Gimarangan

Time	Presenter	Title
10:30-10:40	Anna Krystelle F. Malolos	Financial literacy of micropreneurs in Barangay Aporawan, Aborlan, Palawan
10:41-10:44		Q&A
10:45-10:55	De Leon, John Eric	Population density and length-weight relationship of Manila clam *Ruditapes philippinarum* Linnaes 1758 in Passage Island, Taytay, Palawan
10:56-10:59		Q&A
11:00-11:10	Carolyn M. Illescas	Early literacy skills and parental perceptions in reading difficulties of beginning readers
11:11-11:14		Q&A
11:15-11:25	Kei Jullesse Q. Macolor	Living myth in a living world: a structural and mythical analysis demystifying the credence renowned “lason” chronicles in Aborlan, Palawan
11:26-11:29		Q&A
11:30-11:40	Josephine M. Salmo	Content analysis of cell division concepts in senior high school biology textbooks
11:41-11:44		Q&A
11:45-11:55	Cheche E. dela Cruz	Kahusayan sa paggamit ng mga wastong salita ng mga mag-aaral sa kolehiyo ng edukasyon sa Western Philippines University
11:56-11:59		Q&A
12:00 – 1:29	**LUNCH BREAK**	
1:30-1:40	Borres, Mark Anthony Talili	Fishing operation of bagnet fisheries in Alfonso XIII, Quezon, Palawan, Philippines
1:41-1:44		Q&A
1:45-1:55	Marianne M. Bagona	Implementation of Brigada Eskwela among secondary schools of Brooke’s Point, Palawan: Basis for an Action Plan

1:56-1:59		Q&A
2:00-2:10	Abner C. Salazar	Implementation of technical vocational livelihood track in Roxas Central District"
2:11-2:14		Q&A
2:15-2:25	Mariel D. Ipil	Client's satisfaction on the Business One Stop Shop Program of the City Government of Puerto Princesa, Palawan among accommodation establishment
2:26-2:29		Q&A
2:30-2:40	Dexter L. Santillan	Readiness of newly hired teachers at Schools Division of Puerto Princesa City: Basis for policy formulation
2:41-2:44		Q&A
2:45-2:55	Mildred A. Pascual	Process and issuance of special patents for public school sites in the Division of Puerto Princesa City, Palawan
2:56-2:59		Q&A
3:00-3:10	Precious Dee H. Toelentino	Adaptation amid adversity: Exploring the impact of invasive *Chitala ornata* on the fisheries sector in Laguna de Bay, Philippines
3:11-3:14		Q&A
3:15-3:25	Karen Salve M. Maute	The relationship of vocabulary size and depth to reading performance of first-year university students
3:26-3:29		Q&A

Non-competing
(Parallel Session 3; ABBA Conference Room 2, WPU-PPC)
April 11, 2025
Moderator: Mr. Vengie Ravelo
Timer: Mr. John Patrick F. Mecha

Time	Presenter	Title
10:30-10:40	Marvy Claire N. Mortega	Meso- and microplastic occurrence in the gastrointestinal tract of yellow fin tuna *Thunnus albacares* (Bonnaterre, 1788) from the fish-landing site in Tabco City, Albay, Bicol, Philippines
10:41-10:44		Q&A
10:45-10:55	Maria Corazon R. Collantes	Fecal coliform assessment of pen shell *Atrina pectinata* (Linnaeus 1767) related to food safety in Sorsogon, Philippines
10:56-10:59		Q&A
11:00-11:10	Christian D. Cajilig	Length-weight relationship of three groupers (*Epinephelus* spp.) landed in City fishport of Bgy. Matahimik, Puerto Princesa City, Palawan
11:11-11:14		Q&A
11:15-11:25	Vannesa G. Cornel	Perceived impacts of climate change on the food security of the coastal community of Sta. Lourdes, Puerto Princesa City, Palawan, Philippines
11:26-11:29		Q&A

11:30-11:40	Jarah M. Gustam	Bacteriological quality and putative pathogenic antibiotic-resistant bacteria in recreational marine water of Hartman Beach, Puerto Princesa City, Palawan
11:41-11:44		Q&A
11:45-11:55	Heb Driane L. Herradura	Bacterial load and pathogenic antibiotic-resistant bacteria in recreational water or Puerto Princesa Bay, Puerto Princesa City, Palawan, Philippines
11:56-11:59		Q&A
12:00-1:29	**LUNCH BREAK**	
1:30-1:40	Ma. Cecelia H. Vasquez	Spawing, fecundity and fertility of green mussel *Perna viridis* above ambient temperature (30°C)
1:41-1:44		Q&A
1:45-1:55	Jesrael C. Bernadas	Tracer study of the Bachelor of Elementary Education and Bachelor of Secondary Education graduates in Western Philippines University-Quezon Campus for academic year 2007-2023
1:56-1:59		Q&A
2:00-2:10	Rodulf Anthony T. Balisco	Beyond the wonders: Unraveling the aquatic faunal diversity of Puerto Princesa Subterranean River, Palawan, Philippines
2:11-2:14		Q&A
2:15-2:25	Angelica Marie R. Dillera	Green mussel, *Perna viridis* spat production at BMRS: A step towards sustainability and food security
2:26-2:29		Q&A
2:30-2:40	Mari Mar D. Asuque	Morphology of *Macrobrachium lar* in Palawan River System, El Nido, Palawan
2:41-2:44		Q&A

Poster Presentations
POSTER PRESENTATIONS
CED Building, WPU-Main Campus
April 10, 2025

Poster Number	Presenter	Title
Competing (Professional)		
1	Anne Gellie P. Pablo	Upscaling of processed palawan mango (*Mangifera indica* L.) products towards enterprise development
2	Maica U. Cristobal	Interactive educational e-book: a tool in improving the understanding on the topic "factors affecting the rate of chemical reaction" among Grade 10 learners
Non-competing		
3	Princess RV Dela Ola	Climate change awareness and household food (in)security of Barangay Iraan, Aborlan, Palawan
4	Noralyn F. Noor	The mediating role of right-wing authoritarianism on religiosity and homonegativity among MSU Main Muslim college students
5	Baby Amor I. Alog	Up you go: a board game to improve the Grade 7 learners proficiency level on the layers of the atmosphere
6	Lita B. Sopsop	Population and health status of almaciga (*Agathis philippinensis* Warb.) in the proposed "Saving Kensad Treasure" in Narra, Palawan, Philippines
7	Cesario A. Bacosa	Gravimetric bio-geopermea wastewater treatment device for heavy metals removal of mining effluent

POSTER PRESENTATIONS
Audio-Visual Hall, WPU-PPC, Sta. Monica, Puerto Princesa City
April 11, 2025

Poster #	Presenter	Title
Competing Posters (Professional)		
1	Nino Jess Mar F. Mecha	Baseline assessment of diamondback squid *Thysanoteuthis rhombus* (Troschel, 1857) fishery in Rizal, Palawan, Philippines
2	Edgar P. Paalan	Expansion of 'red-tide' in palawan? First report on the occurrence and distribution of toxic *Pyrodinium bahamense* in Shark Fin Bay, Palawan, Philippines
3	Denz Ryl L. Herrera	Spawning performance of conditioned and unconditioned sandfish (*Holothuria scabra*) under varying temperatures
Competing Posters (Undergraduate)		
4	Vhan Pheonix M. Fernandez	Behavior of abalone *Haliotis asinina* at different salinity levels
5	Joanne G. Paala	Assessment of marine phytoplankton in selected recreational waters of Puerto Princesa City, Palawan
Non-competing Posters		
6	Rica S. Talaver	Species composition, population density, and size structure of commercially harvested Bivalves in barangay Berong, Quezon, Palawan
7	Mia B. Baquiao	Consumption rate of abalone *Haliotis asinina* on selected macroalgae
8	Nikka Ela B. Samaniego	Catch composition, species richness, and abundance base on moon phase of fish corral at Brgy. Pancol, taytay Palawan
9	Rogelio IV O. Lopez	Diversity and taxonomy of goatfishes (Mullidae) from selected areas of Palawan, Philippines
10	Jessa Mae T. Amalia	Species composition and abundance of freshwater crabs in Tampisaw Stream, Bagong Bayan, Puerto Princesa City, Palawan
11	Renzo F. Saclet	Color effectiveness of five different jerkbait sinking minnow artificial lures using a rod-and-reel set up in reef area of Barangay Poblacion, San Vicente, Palawan
12	Winnie L. Arzaga	School improvement plan of Roxas South Distract Division of Palawan
13	Rodulf Anthony T. Balisco	Ichthyological diversity of Palawan, Philippines
14	Cristobal Cayetano	Diversity and community structure of seagrass at Arrecife Island, Honda Bay, Palawan, Philippines
15	Cristobal Cayetano	Multivariate analysis of the phytoplankton community in Puerto Bay, Palawan, Philippines

NUMBER OF PRESENTATIONS PER COLLEGE

MAIN CAMPUS								
Category	**CFiNS**	**CED**	**CPAM**	**CCJE**	**CAS**	**CET**	**CAFES**	**Total**
Competing Oral		1	2			7	2	12
Non-competing Oral	1	7	2	3	1	3	4	21
Competing Poster		1					1	2
Non-competing Poster		1	1		1	1	2	6
Sub-total	**1**	**10**	**5**	**3**	**2**	**11**	**9**	**41**
PPC CAMPUS								
Category	**CFiNS**	**CED**	**CPAM**	**CCJE**	**CAS**	**CET**	**CAFES**	**Total**
Competing Oral	8	1		2	1			12
Non-competing Oral	14	8	5					27
Competing Poster	5							5
Non-competing Poster	9	1						10
Sub-total	**36**	**10**	**5**	**2**	**1**			**54**

Grand Total	**CFiNS**	**CED**	**CPAM**	**CCJE**	**CAS**	**CET**	**CAFES**	**Total**
	37	20	10	5	3	11	9	**95**

INVOLVEMENT OF UNDERGRADUATE, GRADUATE AND PROFESSIONALS

MAIN CAMPUS								
Category	**CFiNS**	**CED**	**CPAM**	**CCJE**	**CAS**	**CET**	**CAFES**	**Total**
Undergraduate		1	2			2		5
Graduate students		2	1	1			1	5
Professional	1	7	2	2	2	9	8	31
Total	**1**	**10**	**5**	**3**	**2**	**11**	**9**	**41**

PPC CAMPUS								
Category	**CFiNS**	**CED**	**CPAM**	**CCJE**	**CAS**	**CET**	**CAFES**	**Total**
Undergraduate	19		1		1			21
Graduate students	10	3	4					17
Professional	7	7		2				16
Total	**36**	**10**	**5**	**2**	**1**			**54**

COMMITTEE MEMBERS

RIDE DEPARTMENT

Tasks	In-Charge
Overall Coordinator	Dr. Lota A. Creencia Dr. Roger G. Dolorosa
Audio-Visual Presentation (Mechanics and criteria)	Dr. Jennifier Diamante
Overall Coordinator-Working Committee	Ms. Jireh J. Baltazar
Event Planning and Coordination	Mr. Earl Timothy T. Bungay
Timer, Secretariat, Procurement	Ms. Rechiel S. Villarosa Ms. Jiecel B. Ducal Ms. Queenie Badilla Ms. Clarey Lyn S. Lariza
Snacks/Meals distribution, Accommodation, Conference Evaluation	Ms. Marlina Solivio
Documentation, messenger, Promotion)	Mr. Christian L. Pangilinan
Technical, additional manpower	Mr. Jonard Gamutia
Messenger, poster display & viewing, additional manpower	Mr. Allan Padul Mr. Larry Villarosa Mr. Ramiro Catalino Mr. Nolly Jaranilla Mr. Mark Philip Lagutan Mr. Anselmo T. Abortigue
Timer, Communications, TARF/NTARF/Trip Ticket	Ms. Hannah Dianne M. Ocop
Prepare Book of Abstract, Publicity, Promotion, Documentation	Dr. Roger G. Dolorosa Ms. Kryzell Ann J. Trestiza Mr. Jovan A. Gimarangan Mr. John Patrick F. Mecha
Secretariat, Documentation	Ms. Joann V. Agasa Ms. Arlyn N. Bonbon

INFORMATION AND COMMUNICATION TECHNOLOGY

Tasks	In-Charge
Internet Connection and ResearchGate Online Registration	Engr. Michael Angelo D. Maga-ao Mr. John Pacifico S. Sariego Mr. Jovan A. Gimarangan Mr. John Patric F. Mecha Mr. Cyrilmarl P. Dumlao Mr. John Paul Navarro Mr. Janel Cayao

COLLEGE OF ENGINEERING AND TECHNOLOGY (CET)

Tasks	In-Charge
Overall Coordinator	Dr. Maribel B. Peneyra
Event Planning and Coordination	Engr. Danny Abrina Engr. Romel Panis
Judging of Competing Entries	Engr. Jibsam Andres
Venue and Logistics	Engr. Coleman Tiw-An Engr. Arman Arangorin
Program and Invitation	Engr. Ivane Banlawe Engr. Kristinne Clarisse Canilla Ms. Kristinne Lingo
Publicity and Promotion	Engr. John Bryan Villapa Engr. Hernando Lagan Jr.
Event Execution	Dr. Cesario Bacosa Jr.

	Engr. Jibsam Andres Engr. Jaysoon Macmac
Post Event Evaluation)	Dr. Cesario Bacos Jr. Ms. Cherry Lyn Magbanua
Registration	Engr. Judith Hilario Engr. Robert Abrasaldo Engr. Mark Jenno Denzon

COLLEGE OF FISHERIES AND NATURAL SCIENCES (CFiNS)

Tasks	In-Charge
Overall Coordinator	Dr. Jean Beth S. Jontila
Plenary Speaker (Ticket, accommodation etc.)	Dr. Jhonamie M.Omar
Program, Schedule of Presentations, and QR for abstracts	Ms. Hannah Mae T. Catalayban Mr. Nino Jess Mar F. Mecha Mr. Randy B. Ardines Ms. Kryzell Ann J. Trestiza
Registration, Post Evaluation, and Certificates	Ms. Recca Sajorne Ms. Gladys Hannah Escalante Ms, Mercy Fulgencio Mr. John Patrick F. Mecha
Moderators and Master of Ceremony	Dr. Ma. Lotus Patiluna Dr. Rodulf Anthony Balsico
Judges and Criteria (Poster and Oral) and Facilitation of pre judging for Posters	Dr. Herminie P. Palla Dr. Ma. Mojena G. Plasus Ms. Arlene L. Avillanosa
Venue, tables for judges, poster stands and numbering, and booth for Research Gate and Google Scholar registrations	Dr. Joel G. Becira Mr. Bernaldo Montano Mr. Romel Valencia Ms, Mercy Fulgencio (NTARF) (w/ ICT Staff/Mr. Maga-ao and Mr. Omar)
Technical (Sound, PPT Presentation sequencing)	Mr. John Roderick V. Madarcos Ms. Lyca Sandrea G. Castro (w/RIDE and ICT Staff)
Food, Leis, and other Supplies	Ms. Aurelia Nalzaro (w/ Jean Beth Jontila and RIDE Staff)

CRITERIA FOR JUDGING

Oral Presentation:

Particulars	Percentage
Scientific content and accuracy	25
clarity of presentation	20
Presentation skills (Delivery and confidence)	15
Slide design and visuals	15
Time management	10
Engagement and audience interaction	10
Handling of questions	5
TOTAL	**100**

Poster Presentation:

Particulars	Percentage
Scientific content and relevance	25
Graphical abstract quality	20
Layout and design	15
Data presentation and clarity	15
Innovation and impact	10
Text and language quality	10
Engagement and presentation (pitching)	5
TOTAL	100

Audio Visual Presentation:

Particulars	Percentage
Content quality	40
Creativity and Innovation	25
Clarity and delivery	20
Impact and relevance	15
TOTAL	100

MISSION

WPU commits to undertake quality instruction, research and extension programs towards a progressive Western Philippines.

VISION

The leading university for holistic human development in Western Philippines and beyond.

CORE VALUES

Culture of Excellence
We excel in the performance of our duties to achieve quality results.

Commitment
We commit our talents and abilities for the general welfare of the University.

Creativity
We innovate for the development of the University and its stakeholders.

Teamwork
We promote team approach at all times to achieve common goals.